

No.
68

THE MAGAZINE OF TOMORROW

AUTHENTIC SCIENCE

FICTION MONTHLY

2/-



ARTICLES: WHAT RADIATION DOES; MIND OVER MATTER
STORIES: J. T. McINTOSH, H. K. BULMER, S. J. BOUNDS, etc.

AUTHENTIC SCIENCE FICTION MONTHLY

Editor:
E. C. TUBB

Art Editor:
J. E. MORTIMER

Cover by-
E. L. BLANDFORD

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Editorial

BACK IN APRIL 1926 A NEW baby was born in the magazine world, a baby which, for want of a better name, was christened science fiction. It was not a good name and in less than two years attempts were being made to find an alternative. The result 'Scientifiction' promptly shortened to Stf, was soon discarded for the original, and science fiction, as we know it, was here to stay.

But because it bears the same name it does not necessarily follow that the style of writing has to remain as it did.

Many older readers will have noticed the change in the literary standards and the swing from the 'gadget' type of story to those dealing with real characters and logical situations. It is a good trend and should be encouraged—too many people still think of science fiction as adult fairy tales suitable only for morons and almost

refuse to believe that adult books such as 1984 are science fiction at all. It is an attitude of mind which can only be broken by science fiction maturing into a fully accepted medium divorced from any taint of fantasy, pseudo-science, and formula-writing.

To define science fiction is difficult and to write it is becoming increasingly hard. Many stories which, a few years ago, would have been classed as science fiction cannot now be so considered. Stories dealing with atomic power have to confine themselves to what is known about that source of energy. Atomic power is real, it is with us today in actual use, and stories dealing with its discovery and use cannot be science fiction any more than the invention of the submarine or the airplane.

Science fiction, as a prophet, is rapidly putting itself behind the times.

Probably the best definition

of science fiction is "What would happen if?" The 'if' is limited only by the imagination of the writer, but with that imagination, he must use knowledge so that he can make an intelligent extrapolation without insulting the intelligence of his readers. It isn't as easy as is popularly supposed; let us see why.

The author has to set a background. It may be a familiar one or, as is most often the case, it will be a futuristic one. That means that the author has to think out, logically, the likely trends of our society in the near or distant future. Against this background he has to set his story and, in order to develop his story, he has to use real people as his characters.

He has to do all this while holding the interest of the reader. His explanations must be both educative and entertaining and he must remember that, while he knows what he is writing about, he must also communicate those ideas to the reader. Stories which cannot be understood are failures.

Stories which are boring are the same. Stories must be entertaining and, if at the same time they can educate and point a moral, that must be secondary to their main purpose. Stories are written to entertain the readers. Science fiction stories do it by exercising the imagination and by logical extrapolation. They cannot do it if they assume the readers are morons, illiterate, and unintelligent. The fact that they are reading science fiction at all is good proof that they are far from that.

And it would be as well for readers and authors both to remember that the title of our magazine means something. *Authentic* science fiction. Not pseudo-science, or fantastic-science, but true, *Authentic* science fiction. In other words no known scientific fact can be contravened and, as far as possible, all extrapolations will be both logical and scientifically possible.

Our articles will help you there. To increase your enjoyment of the stories it is as well to have some knowledge of scientific matters

and probable developments. Once you have that then the story becomes more real; you can gain a closer affinity with the characters. For example, after reading the article on "*What Radiation Does*" you will know how important it is to shield atomic piles, the results of exposure to radiation, and the terrible physical degeneration caused by such exposure. You will be able to check an author if he uses such exposure in his story and, by knowing just what he is talking about, you will increase the entertainment value of that particular story to you.

And the other articles are the same. They, together with the stories, will open to you vistas of the future and give you a new understanding of the great adventure which lies just ahead, the actual conquest of space itself. Never forget that, soon now, the first artificial satellite will be launched into the heavens. It is the first step, the end of the beginning, and when the first ship reaches the moon, we, the readers of science fiction, will have seen the

culmination of our dreams.

Who would have thought it possible thirty years ago?

But to get back to the present. Have you noticed anything about this issue? That's right, no photographs, no small body type, and as many stories and articles as the pages will hold. More fiction than articles, naturally, much more, but I think the ratio is about right. I've kept small type in the letter column because that way we can print more letters and so give you even more value for your money.

It is a step towards that perfect issue we talked about, only a step, but I think in the right direction. Perhaps you won't agree with me. Well, if you don't, write in and say so. Perhaps you do, and in that case I'd like to hear from you just the same.

Never forget that this is our magazine. It is produced for you, and all of us, writers, editor, publishers, want to give you what you want. We can only do that if we all work as a team.

Will you remember that?

E.C.T.

FREE FALL

ONE OF THE PHENOMENA TO BE met in space is that known as free fall. It is the condition of 'weightlessness' which will be experienced when the motors are shut off and the ship 'coasts' through space. As everything is falling at the same speed there will be no 'up' or 'down,' and this condition will cause amusement and possible embarrassment to those experiencing it.

Eating, for example, will be far from easy. As the man on the cover is demonstrating, drinking from an ordinary glass will be impossible; the liquid will merely form itself into globules and drift about the cabin until they burst on impact. Drinking will be done from sealed containers, the liquid sucked through a tube, and any crumbs or fragments of food not eaten will drift through the air like tiny balloons.

Most equipment can be fastened to the bulkheads and the use of permanent magnets

will serve to anchor most loose objects to the metal structure. Such magnets in the boots of the crew will permit them to walk without shooting up into the air at every step, and had such magnets been placed in the covers of the book, it would not have floated through the air.

In free fall it will be almost impossible to light a match. In order to keep it burning it will have to be waved from side to side to supply it with fresh oxygen for the flame. If this is not done a layer of 'dead' gas would soon extinguish the flame as, with no difference in weight, the hot gases would not rise and form convection currents. The same phenomena would tend to make the crew uncomfortably hot unless they managed to find some way of circulating the air, either by constant motion or by fans.

But despite this free fall will certainly enliven the monotony of a long space journey.

Woman or...? That was——

THE DECIDING



FACTOR

by J. T. McINTOSH



VISIBILITY IN THE STEAMING swampland was never more than a few hundred yards and often much less as the hot white mists rolled and thickened before swirling away again.

Nevertheless, anyone watching, if there had been anyone watching, must have found it strange that the girl picking her way daintily among the steaming pools didn't seem to know she was being surrounded.

If she had looked back, if she had ever looked back, she could hardly have helped seeing some sign of pursuit.

True, the savages trailing her were split into groups of two or three, and they were advancing very cautiously, taking advantage of all possible cover. But there were so many of them that a quick glance over her shoulder must certainly have shown the girl some hurried, furtive movement which would have alerted her.

She never did look back. She picked her way carefully round the pools, testing each new, different-looking patch of ground before she would

JOHN MORTIMER

venture on to it, an obvious tenderfoot. She didn't seem to know that only the light green, speckled patches were dangerous swamp.

The savages were spreading out in order to move in on their quarry from all directions. Evidently they knew about the weapon she carried at her belt.

As a matter of fact, most of them were aware, dimly, that many of them were going to die before she was captured. Their losses would be smaller, undoubtedly, if they were content to kill her instead of capturing her unharmed, but they hated this girl and her people so much that that was an unimportant consideration weighed against the delirious joy of torturing her to death with such ingenuity as they possessed, which wasn't much.

It was because of her weapon that they were flanking her, making sure that no matter how many of them she managed to kill first, she wasn't going to escape.

The girl herself was like a movie heroine who was supposed to be hundreds of miles

from civilisation but had obviously stepped straight from a make-up room. She wore a dazzling white blouse, pale blue slacks and crocodile-skin shoes, a casual enough outfit—yet she was dressed as perfectly, in a different way, as a princess attending a ball.

She was a shining, glittering product of a high-powered civilization and she was in the midst of crude and barren desolation.

The savages wore ill-cured skins, if anything; were dirty, stringy, angular, awkward, had matted, tangled hair and moved clumsily, their movement a world apart from the lithe grace of the girl they were trying to capture. The women among them didn't seem to belong to the same species as the girl in front of them, let alone the same sex.

That was reasonable enough: they didn't. They were neuters.

A cliff-face loomed before the girl suddenly, hidden until then by the white, swirling mists. She paused for a moment, then made for a narrow crack which was

visible in the rock face in front of her.

Some of the neuters hesitated uneasily, knowing where that crack led. It widened into a valley, a narrow, rocky plain boxed in on all sides except at the crack, its one entrance.

Those who were uneasy didn't know why. They didn't know what a trap was. They had no language, no word for *trap*, but the idea of a trap was just within the scope of their limited intelligence.

They couldn't work out what was likely to happen, but they knew, as vaguely as they knew most things, that the valley was a very dangerous place to follow the outlander into.

However, they followed her. She disappeared through the crack, and seconds later the first of the neuters went in after her. Their misgivings weren't nearly strong enough to make them abandon the pursuit—not when there was a chance of actually seeing one of the outlanders die.

Inside, they stared. There was no sign of their quarry.

There was plenty of cover in the valley, rocks, bushes, springs, holes. She was here all right, and close. But spreading out thinly looking for her hiding-place would weaken their hand and strengthen hers. Even the neuters could see that.

Suddenly there was a shout from a neuter who had gone on ahead. He was pointing. They looked where he pointed.

The girl was about a quarter of a mile away, running. Gone was all pretence that she didn't know she was being pursued. She must have started to run the instant the narrow cleft hid her from her pursuers.

The savages began to run too. They shouted wildly, wordlessly, exultantly, glad that the cautious pursuit was over. The outlander didn't know that valley, apparently. They did. The further she went, the more surely she was trapped.

Ninety savages raced clumsily across the rough floor of the valley. Here the mists were thinner than in the swampland.

The girl wouldn't escape in the mist.

She stumbled and fell. The savages' cry of joy echoed back and forth from the walls of the valley. The foremost of them were almost upon her when she got up and ran on, limping.

Even limping she could outdistance them. The neuters were hard and tough, but not quick on their feet. Limping, running much more slowly than at first, she nevertheless managed to get so far ahead that when she disappeared they weren't sure exactly where she'd been when they lost sight of her among the piled rocks of a long-ago avalanche.

When she reappeared, some of the older, more experienced neuters saw the trap, at once, in one blinding flash. It was too late to do anything about it. The mistake had been made.

She burst from hiding some distance from where they were looking for her. She raced toward the entrance to the valley, going like the wind. There was no sign of a limp now.

She was past them in a flash. They turned and lumbered after her, but the way she was going, long legs flashing in beautiful, ordered motion, they never had a chance of catching her.

And it hadn't occurred to anyone to leave anyone at the cleft. The neuters had no leader, no one to think of things like that and make sure they were done . . .

They were only neuters, after all.

The sight of the outlander running further into a valley from which there was only one exit had been too much for everybody. One pursued—all pursued.

Once more the savages chased their quarry, yelling, but this time their yells were cries of despair and fear, not wild anticipation. Not everyone knew what was going to happen, but at least thirty of them did.

It happened just as they expected. The girl reached the cleft fully half a mile in front of the first of the savages, dashed through . . .

And a rock fell. There was

no other sound, for the girl's gun was silent.

Then another rock crashed down into the narrow cleft.

Soon an avalanche was filling it.

By the time the neuters reached it the crack was filled and there was no entrance to the rocky valley.

And no exit.

Doris stood on the other side of the cliff face and surveyed her work with satisfaction. Small rocks still crashed down occasionally. Rock dust swirled in the air, slowly settling.

She was breathing hard, but the racing of her heart was due more to excitement than to her exertions.

Sport wasn't sport unless you risked as much as you could gain, and she'd done that. The neuters might have rushed her at any time, and if they had done so they might certainly have killed her. It had taken all her courage to walk on as she had done, aware of the androids behind her, trusting to their hate and caution to

let her lead them to the cleft, follow her into the valley . . .

They might have left a guard at the cleft. If so, she'd have had to shoot her way through.

No, she thought exultantly, the undoubted advantage her weapon gave her had been offset by the risks she had deliberately taken to achieve this *coup de theatre*.

It was a pity there were no witnesses. She could report the exploit, and it would be believed, more or less, but there would be people who would say she was exaggerating all the way through.

Anyway, she'd fly over and get some pictures of the valley and the trapped neuters to confirm part of her story.

She turned away and looked up at the sun. It was completely hidden by clouds and mist, but she could see where it was, and a calculation of the time of day gave her a bearing. She set off southwards.

Androida wasn't magnetic. That was another of the hazards—compasses were useless. Careless hunters got lost sometimes, quite apart from

those the androids managed to capture and kill. Oh, hunting was dangerous, all right.

But Doris was too experienced to get lost. Twenty-nine now, she'd been hunting on Androida since she was sixteen.

It never lost its savour. Hunting animals did—she had long since lost interest in hunting the animals of Androida.

Hunting neuters never palled. Perhaps it was the fact that one was hunting pseudo-humans that kept the sport fresh and exciting. It was almost as good as hunting real . . .

No, one wouldn't want to hunt real human beings. Doris shuddered slightly. It would be horrible to think of nearly a hundred men and women, no matter how primitive, being prisoned in rock and left to starve. Androids were just right—intelligent enough, human enough to be worthwhile game, and yet, of course, not human at all, less human than even the animals of Earth.

Just neuters—neither men

nor women. The third sex, androids.

Androida had once been called Venus. But Venus had been a dust-bowl, a world of choking poison, a world without life. When Venus had been remodelled, more than two hundred years ago, the name had been changed like the world itself.

Wild, pestilential vegetation had helped to soak up Venus's carbon dioxide—vegetation specially mutated for the job. Then, at a later stage, all that crazy plant life had to be destroyed, its work done.

New strains had fought the swirling sands of Venus, and won. Only the vast South Desert was left to indicate what Venus had once been like—and even that, grim and boiling as it was, was a mighty oasis compared to what all Venus had been.

Venus didn't become Androida until the first androids were taken there. Clumsy and ugly and half-human as the neuters were now, they were perfection itself in comparison with those first, horrible efforts.

Doris was quite close to her plane when she came across

a neuter lying asleep in the shelter of a rock. She looked at it in some surprise. She had seldom seen an android sleeping, alone, by day like that. She looked at the creature curiously.

It was a woman, if you could call androids men and women. She was naked, as two out of three androids were.

As Doris bent over her, the neuter, warned by the sixth sense of all wild creatures, jumped to her feet and faced her danger.

Doris stared. For a second or two, had the android woman but known it, Doris was so surprised and shocked that the neuter could have wrested her gun from her and clubbed her with it.

The android woman was Doris.

Doris had known, of course, that actual human beings were always used as models for the neuters. She had known of others, very rarely, meeting their doubles in Androida. But it happened so seldom and to so few people that she had never considered

the idea that it might occur to her.

If the neuter had really been her double, it wouldn't have been so bad. But the creature was disgusting. It was like looking in a mirror and seeing someone else, old and ugly.

The neuter had Doris's face, set in lines of brutishness and stupidity. But she didn't have Doris's body, surely, Doris thought, looking at the neuter in horror. She put one hand involuntarily to her own flat stomach to make quite sure it wasn't round and bloated like the android's. And even if she didn't wear a bra, even if she *never* wore a bra, her breasts couldn't sag like that—could they?

The dirt, the coarseness, the awkwardness, the ugliness were extra, just to complete the shocking picture.

The neuter turned to flee. Doris turned from her, sick. She didn't wish the creature any harm—merely wanted her out of her sight.

But suddenly, without thinking, Doris raised her gun and shot a great hole through the middle of the

android. As the body collapsed loosely, Doris caught her breath. She hadn't meant to do that.

Killing the creature was all right, but she should have given it a chance. She should have thrown her weapon aside and fought it on level terms . . .

She found her little ship soon afterwards. All pleasure in the action earlier was gone. Meeting her android double, and being shocked into unsporting killing, had destroyed her satisfaction. She had thought she was too experienced a huntress ever to do a thing like that.

Some people killed neuters like that, she knew. That was up to them, but she was a huntress. She shouldn't have lost control and . . .

Yet she couldn't let that creature live, a cruel, obscene parody of herself. Suppose anyone who knew her met it?

She got into the air and set the ship on automatic for Earth. She had forgotten her plan of taking some pictures of the valley and the neuters she had trapped there.

Anyway, they didn't matter any more.

"I suppose," Peter Craddock dictated ironically, enjoying himself, "that G. L. Smithson takes care never to drive his car too fast, in case he's cruel to the engine? And presumably he never switches on the radio without getting its permission first? It might not feel like playing just then."

He paused to collect his thoughts, and Sylvia, his secretary, coughed in protest. Peter didn't notice.

"Can it be," Peter went on sarcastically, "that G. L. Smithson *doesn't* do these things? Perhaps he thinks, like the rest of us, that machines have no feelings and that the question of inhumanity to them doesn't arise."

Sylvia coughed again. Peter, in full cry, once more failed to notice.

"But he obviously doesn't see that androids are machines, just as cars and radios are machines, just as robots are machines. They have the feelings we build into them, that's

all. If we don't give them an instinct of self-preservation, they don't care whether they live or die. No one ever writes letters to the newspapers about the scrapping of old robots, but just because neuters look rather more like human beings than robots do, people like G. L. Smithson get all——"

"Excuse me, Mr. Craddock," said Sylvia plaintively. "Don't you know it's two thirty-five?"

Peter looked at the clock. "So it is," he said in surprise. "Sorry, Sylvia. Knock it off working time tomorrow."

"I will," said Sylvia righteously. She left the office with a sniff of indignation. As she went out, Doris came in.

Peter looked up with raised eyebrows. "This is an unexpected pleasure," he remarked, but somehow he just failed to sound pleased.

Doris's smile stiffened. They had got to the stage when anything either of them said provoked the other.

"After all, we *are* still married," she retorted, on the defensive already.

"I know that."

"People will think it queer if we don't——"

"People," said Peter, amused, "have long since stopped expecting us to behave like a couple of love-birds."

Doris hesitated, controlled herself. It was less than an hour since she had lost control of herself on Androida and destroyed a poor creature who looked something like herself. She didn't want to give way to anger again. She struggled to be in control, to take the initiative, to make Peter love her again.

"It didn't use to be like this," she said, rather pathetically.

"Does that prove anything?" Peter asked, not meaning to start an offensive, not seeing any alternative.

"Some people can stay happily married."

"Does *that* prove anything?"

"Sometimes I could cheerfully strangle you."

"I've no doubt." He sighed. He knew she'd throw herself in his arms if he said the right thing, but he couldn't bring himself to say the right

thing. "You came to see me about something?"

"It doesn't matter."

"You might as well tell me."

She sat down. During the trip from Androida to Earth, which took thirty-five minutes on automatic, she had changed into civilized clothes. She had even tried to make herself particularly attractive, since she got the idea of calling on Peter. She had known perfectly well he wasn't going to say: "Darling, how lovely you are!" and take her in his arms, but there was no harm in wishing.

No harm—not until it flopped, until they bickered as usual, and she found disappointment swelling in her throat and choking her. Each time it was worse. Each time made it a little less likely that all the little wounds would ever heal and be whole, healthy and strong again.

"I just wanted to talk about something," she said. "But if you're going to be like that I can't even start."

"I'm not going to be like that," said Peter gently. "Go ahead, Doris."

She told him about her experiences on Androida, how she'd left Earth early that morning—he wouldn't know about that—landed near that valley a friend had told her about, locked up her ship, and set about collecting a horde of neuters set on killing her; how she'd led them into the valley prison and locked them in it; how she'd encountered an android double and killed it.

"You shouldn't have done that," said Peter mildly.

"I know, I——"

"It costs about fifty dollars to make an android and take it to Androida. If they could only breed, how much simpler it would be . . . I don't say anything against your exploit earlier—that was a good trap and well worth it. But just shooting an android, for nothing . . ."

"I couldn't let that creature live!"

Peter shrugged, not unsympathetically. "When you go to the Centre and they take patterns, they always make at least twenty copies. It's cheaper that way. So presuming half a dozen of

yours are dead by now, that leaves fourteen still wandering round Androida . . . You just have to get used to the idea."

Doris nodded. They hadn't fallen into each other's arms, yet there was something reassuring about his reaction, as she had known there would be.

To say she was still as much in love with him as ever would be ridiculous. But it was quite true, and she admitted it to herself, that she didn't want any other man.

Peter gestured at a folded newspaper on Sylvia's desk. "Someone who wrote to the *Sun* would be horrified at the story you've just been telling me," he remarked.

Doris picked up the paper. She read, frowning.

"Crazy fanatic!" she murmured.

"Fanatic, yes, but not precisely crazy. I feel I have to reply."

"Officially?"

"Semi-officially. As president of LOC."

"Can I see your reply?"

"It's in Sylvia's book. Maybe I'll pick it out on a typer

with one finger rather than let it wait till tomorrow."

"Couldn't she even stay to finish it?"

Peter grinned wryly. "And work ten minutes overtime? When she'd already been working a full hour and a half? You don't know our Sylvia."

Doris sighed. "I'd think she'd be glad to have something to do. Even if only for an hour and a half a day."

Peter looked at her with his usual amused compassion. She had her finger on it, all right. The trouble with Doris, of course, was that she didn't have enough to do.

But she wasn't unique. It wasn't just Doris's problem.

Nobody had enough to do.

In the nineteenth century, when a working day of fourteen hours was in no way unusual, the question what to do with one's leisure didn't arise.

There wasn't any.

A hundred years later, with a much shorter working day, people still didn't have much trouble filling in their free time. By this time there were

cinemas, dancehalls, radio, television, football matches, big fights, magazines, cabaret, telephones, golf, night clubs, motels, pocket books, holiday resorts and gramophones to occupy people's time.

Something in human nature continued to rebel against serfdom, and the working population continued to want more pay and more freedom for less work.

And they got it. Machines, particularly robots, made a higher standard of life with more leisure possible. Robots turned out good work and they didn't need any pay.

People still had to work, perhaps would always have to work. But instead of eight hours a day men and women worked six, then five, then three.

And still people demanded more leisure, not because they wanted it particularly, or had anything particularly valuable to do in it, but just because work was obligatory and therefore unpleasant, work equalled unpleasantness equalled boredom equalled slavery.

Thanks to the automatic

machines, cybernetics, robots, working hours continued to shrink.

At last it became illegal for anyone to be employed in any one job for more than two hours a day. Twelve hours a week, that was maximum. A maximum that was rarely reached.

If people *wanted* to work more, nobody stopped them. Peter Craddock, president of LOC, had been known to work ten hours in a day. But there were safeguards to ensure that nobody could be forced to work more than two hours.

The other problem remained, in fact got worse and worse.

What was to be done with the thirteen hours a day that everybody had lying around spare? Cinemas, dancehalls, radio, television, football matches and all the other variants weren't enough. Not for thirteen free hours a day, thirteen hours that *everybody* had to fill in somehow.

Some could spend it in quiet contemplation. Some could listen to music all day. Some could read books.

About eighty per cent of Earth's present vast population, however, needed more—a lot more.

Hence the androids. Hence Androida, a world for sportsmen. Hence Plaisir, otherwise the moon, a little world whose sole business was gambling, entertainment, night life. Hence Exotica, once called Mars, a planet of man-made wonders.

Hence Games Inc. Hence Planetary Entertainments. Hence Sportclub.

And hence LOC—Leisure Occupation Corporation, with a big stake in Exotica, a bigger one in Plaisir, and the biggest of all in Androida.

It had been a long silence. Peter wasn't going to say any more, apparently. Doris hadn't any more to say either. She got up, hesitated. It might be days before she saw him again.

"Well," she said, and moved tentatively toward the door.

"Au revoir," said Peter, smiling faintly.

She nodded and went out.

Peter remained staring at the door. He had an excellent

visual memory; he could still see her almost as plainly as if she were still standing there, that questioning, wistful expression on her face.

There were two Dorises. There was the huntress, bold, fierce, reckless, yet not foolhardy. That was the Doris who had fascinated him, the one he had married, the one he saw so seldom now. And there was the other Doris, uncertain, lonely, vaguely unhappy, jealous, ready to flare up at anything because of her uncertainty.

The ironic thing was that the more she wanted him the more she had lost him. He shied away from the uncertain Doris and sighed for the reckless Doris who had said: "Will I marry you? If you hadn't asked me soon, I'd have *told* you! How about tomorrow?"

He had hovered on the brink of saying what she wanted him to say. If she had strode out boldly, not giving a damn for him, he'd probably have called her back. But he hadn't said anything, because she was hesitating, begging him to say it.

Meantime there was the business of the letter. A thought came to him. The *Sun* office was just down the street.

He shut his private office and ran downstairs. He was getting to the age when he had to run downstairs to prove he could do it. He left his car where it was and walked to the *Sun* building.

Wilcox, the advertising chief, was still there. He frowned when Peter told him what he wanted.

"If there was no address in the paper, perhaps this Smithson fellow doesn't want it given. Anyway, Peter, that's editorial, and you know I'm——"

"I know you can get that address," said Peter calmly, "and I know I can apply blackmail best in the advertising department."

Wilcox nodded gloomily. "If you like to put it that way . . ."

"I like to put it that way."

So Wilcox got him the address. "But look, Peter," he said, "say you got it from the telephone book or something. Don't tell anybody you got it from me."

An eternally worried man, Wilcox. Anybody who was dependent on the whims of advertisers generally was.

Peter grinned at him reassuringly and left him.

Peter went straight to the address Wilcox had given him. He wasn't quite sure why he wanted to see Smithson. He told himself it was because these outcries against so-called inhumanity to androids were becoming more and more common, a force to be reckoned with, and he'd better see what kind of person made them.

The address was a flat in a rather exclusive neighbourhood. Peter pressed the buzzer.

A woman opened the door. A cat which had been rubbing itself on the wall streaked past Peter and pressed itself ingratiatingly against the woman's legs.

"Oh, they've shut you out again!" she exclaimed indignantly, bending to fondle it.

"G. L. Smithson?" Peter inquired, over the woman's neat, dark head.

"Uhuh," she assented ab-

sently, still devoting all her attention to the cat, which was now purring triumphantly. "Come in."

She picked up the cat and he followed her into a neat, obviously feminine lounge. "Excuse me," she said. The words were for Peter, but the croon in them was for the cat she was holding.

She was gone only a second or two. When she returned she was balancing cat, a saucer and a bottle of milk in her arms. Still paying no attention to Peter she set the cat down and filled the saucer of milk for it.

"You're not G. L. Smithson?"

She straightened, nodding.

He might have known it. Seeing her with the cat he had placed her already as the kind of woman who was sorry for every unwanted thing or animal, a sucker for any hard-luck story, a champion of everybody in distress.

Naturally she flew to the defence of the neuters.

She was unusually pretty for her type, however. As a rule girls who looked like G. L. Smithson were quickly

provided with plenty of more conventional outlets for their maternal instinct.

Peter was used to Doris, so he was used to an attractive woman making good use of her raw material. The Smithson's material wasn't any better than Doris's, but she made still better use of it.

"I'd better introduce myself," said Peter. "I'm Peter Craddock, president of——"

The polite interest on her face had frozen the instant he gave his name. "I know what you are," she said indignantly.

Peter was observing her reaction with interest. Quite obviously she hated him for being Peter Craddock, for what LOC did to androids or allowed to be done to androids.

"What does the G stand for?" he asked.

"Mind your business," she snapped. But at Peter's smile, which indicated that he was actually enjoying her rage at him, she murmured with bad grace: "Geraldine, if you must know."

"Glad to meet you, Geraldine."

"I can't return the compliment. And kindly don't call me Geraldine!"

"Mrs. Smithson?"

"Miss Smithson."

"All right. Now that's settled—what are the neuters to you, Geraldine?"

She controlled herself with a visible effort. "Mr. Craddock, I know what's done on Androida. I know that anyone rich enough to take out a hunting licence can simply land there and murder as many androids as he likes. The androids have absolutely no rights, no protection, no——"

Peter nodded. "We'll take that as read. The neuters have as tough a time of it as anything else set up in a shooting gallery to be knocked down. But why the ire, why all this concern?"

The woman shook with fury. "If a child were tortured before your eyes, would you——"

Peter sighed. "Look Geraldine, save the hysterics. All I'm asking is, do you know what you're talking about? Do you know anything about neuters, or are you just

getting sentimental over something you think is inhuman, something you know nothing whatever about, something you're just imagining?"

"I don't imagine the thousands of androids wantonly shot to provide mentally diseased men and women with a sadistic thrill!"

"No, and you don't imagine the thousands of robots scrapped every year—it's the same thing. Geraldine, have you ever been on Androida?"

"Yes!" she blazed at him. "If you only knew . . . What are you getting at, anyway?"

Peter wondered if he should explain that he was trying to find out what made people erupt into scathing indignation like G. L. Smithson's letter to the *Sun*, how much they knew, how much they imagined, what was back of it, what LOC's attitude to such attacks should be.

"Have you ever hunted neuters?" he asked.

"No, never!" she retorted, with loathing in her voice. "And don't keep calling them neuters!"

"Why not?"

"Call them androids if you

like, but neuters means they're nothing at all; it's like calling coloured people niggers, it means the androids are——"

"It means they haven't any sex. And neither they have." He smiled inwardly. Naturally she'd defend coloured people too. And Jews. And Chinese. And anyone or anything else that seemed to need defending. "But I won't call them neuters any more, Geraldine. That's a promise."

He wasn't laughing at her. He liked her. But was there anything behind her attitude, anything but misplaced indignation? That was what he wanted to know. Almost certainly not. Nevertheless . . .

"Look, Geraldine," he said pleasantly, "suppose you try to tell me, calmly and reasonably, what you've got against our treatment of the neut—androids. I'm not unreasonable. If you've got a point, I'll see it."

He stopped her as she was about to burst out passionately.

"But don't get mad at me. I don't believe it matters a tinker's curse what anybody

does to any android. Where am I wrong?"

She looked down at the cat, which had finished the milk, stretched itself, and seemed about to go to sleep. The sight softened her.

"In other words," she said in a controlled voice, "I'm not supposed to argue my way, I'm to argue your way?"

Peter hesitated. She was right. Her arguments were the way she felt, of course. She was imaginative, emotional, sympathetic. And he was asking for logic.

"I'm sorry," he said apologetically. "But you see, logic is the only thing I understand."

Unexpectedly she laughed, and she laughed as beautifully as he'd expected. She looked at him with more friendliness. Now she was sorry for him, because he only understood logic.

"Look at it this way," she said. "The essential point is what the androids are, isn't it?"

Peter nodded, surprised. For Geraldine Smithson, this was very reasonable.

"If they're humans, I'm right and you're wrong, and if

they're robots, you're right and I'm wrong, isn't that it?"

"You're still making sense. Go on."

"Well, I know they're more human than robot. That's all."

Most unexpectedly, this shook Peter. It wasn't just her calm certainty, it was her unexpected grasp of the essential point and her brief, calm statement of the thing which would make her right and him wrong—if it was true.

She saw the effect she'd had on him, and said in some surprise: "Why, you mean it, Mr. Craddock. You really can be convinced."

He shook his head. "I don't think I can be convinced. But I can always see reason. What makes you believe the androids are more human than robot?"

Her anger was gone now, because she liked him, she was sorry for him for only understanding logic.

"If I could convince you of that," she said slowly, carefully, "you, the president of LOC—what would you do?"

Peter shrugged his shoulders. "I said I didn't think you could."

"I know. But what I want

to know is, is it worth while convincing you? If you were convinced, what would you do?"

Peter considered. "Try to get the androids a fair deal, I guess," he said. "But you can't——"

"You *would*," Geraldine breathed. "You really would. I think I believe you."

Peter went home more puzzled by Geraldine Smithson than he had ever been by anybody. Doris had never puzzled him much—perhaps that was the trouble.

Why, when she had seen he was prepared to see reason, had Geraldine suddenly refused to say any more about the androids, insisted that she had to know him better before she produced her "proof"?

It was possible, as she claimed, that she knew things no one else knew. But if so, why the secrecy? Why had he a dinner date with Geraldine Smithson for that evening, under a promise *not* to talk about the androids?

It wasn't because she was a gold-digger, he knew that. She

knew he was married. He was certain all she wanted of him was his support, his services as a campaigner.

And apart from all this, could she be right? Could it be true that androids were more human than robot?

Peter let himself into his house, frowning, considering what he knew about neuters.

It was Doris who hunted them, not him. Twice a doctor had sent him on a hunting-trip, for his health and to release repressions, as the doctor put it. Neuter-hunting had the support of most of the psychologists. You killed a few neuters and worked it off, whatever it was.

Apart from that most of his experience of androids and Androida was second-hand, admittedly. It was pretty considerable, for all that.

Androids were organic, self-fuelling, to a limited extent self-repairing, thinking robots. They did not grow and they had no sex. They were made as children, as mature adults or as old men and women, and only in appearance did these groups differ.

What they had in common with human beings was the food they ate, an ability of cells to repair themselves, a habit of sleeping, a certain faculty of reasoning, and their general appearance.

What they lacked, that human beings had, included the power to reproduce themselves, the ability to recover from more serious injury, and human intelligence. Their emotions were simply what was given to them when they were made—generally no more than an overall desire to survive, a gregarious tendency, and one or two other things which followed from these things. Left alone, they would live for about twenty years. By that time a lot of minor faults would have developed and the creature would die.

They were not, of course, physically as complex as human beings. They were simplified working models, with one plastic lung, one kidney, a heart which was rather more efficient than the human heart but much less adaptable, more liable to injury, and a stomach which couldn't yet be made as small

and compact as the human stomach.

But none of this was visible until you cut them open.

Their intelligence, too, was rudimentary. They were provided with vocal cords which should enable them to speak, but so far no android had learned how to, except for one or two carefully and very patiently trained by experimental psychologists.

At an estimate, androids' IQ on the same scale as humans ranged from about 40-50.

Peter reflected on all this and couldn't see any essential difference between androids and robots. It was no use being kind to neuters—they didn't know you were being kind to them. It was no use trying to get them to do anything unless a desire to do the thing had been impressed on their protoplasmic brains when they were made.

There were android animals too, because some hunters preferred bigger game. Android lions and tigers and panthers. But you had to be careful where you put these

on Androida, or they'd eat up all the neuters.

Peter tried to work out a moral judgment on killing.

It was wrong to kill a human being. Perhaps it was always wrong—certainly it was a mighty, shocking crime for which there might be extenuation but never complete exoneration.

It was also perhaps wrong to kill animals, which had a right to live too. But man was a meat-eater, and was obviously meant to get his protein in that form. So it was wrong, but justifiable, to raise animals for their meat and kill them humanely.

It was not wrong to kill an android. You made a thing, that was all, a thing that looked like a man, without desires, without soul, without life. You gave it life of a sort, but that wasn't enough—it would lie down and starve. You had to give it some sort of desire to live too.

It would be quite easy to make neuters which wanted to die at the hands of human beings. Their sole desire, then, would be to live until some man or woman would kill

them. But where would be the sport in that? No, you had to make androids that didn't want to be killed.

On the basis of all he knew about neuters, Peter couldn't see how Geraldine could even hope to convince him that she was right about the androids and he was wrong:

Some time ago Peter and Doris had split the house into two. They still lived in the same house, technically, but half of it was his and half hers.

They hadn't so much agreed on this as argued the state of affairs into existence. Peter wanted peace, so he had to demand it by promising not to invade Doris's privacy. Doris, from sheer pride, had to say she wouldn't set foot in Peter's half of the house until he asked her to.

So now when he wanted to talk to Doris, Peter called her by visiphone.

"Hallo, darling," he said, as her picture appeared.

Doris was astonished, though she tried to hide it. "Peter!" she exclaimed involuntarily.

Peter looked at her critically, comparing her with Geraldine. He couldn't help it.

"You dine out more than me, Doris," he said coolly. "Where do you suggest I take a . . . friend?"

"Grisson's," said Doris automatically. "What kind of friend?" she added jealously, for Peter's pause had left no doubt of the sex of the friend.

"Oh, just a girl. Thanks, darling. We'll go there."

He hung up. Now, why exactly had he done that? Just to annoy Doris, or because he really wanted her opinion about places to dine?

No, he decided. Not for either of those reasons, but because it wasn't stalemate between him and Doris—because very soon they would have to come together again, or drift much further apart, one or the other.

He wasn't going to have an affair with Geraldine; he was quite decided on that.

Somewhere further back in his mind he was also aware of the fact that men often had affairs with girls they had

never intended to have affairs with.

He found Geraldine as a dinner-companion rather abstracted, very charming occasionally but never for long. Peter was wryly amused at her lapses of concentration. Every time she remembered she was with Peter Craddock, president of LOC and a man who could be very influential in a pro-android campaign, she'd waken up and do her best to interest and be interested. But when she forgot, which was often, she lost herself in her thoughts and answered in vague monosyllables.

"Why aren't you married?" Peter asked.

She was startled into attention again. "Why? Must everyone be married?"

"One would think you'd be."

She started to say something, stopped, started to say something else, stopped, seemed rather amused at something, and finally said nothing at all.

They got on very well for a spell after that, until Peter looked up and saw Doris with a man he didn't know. He smiled across at her.

"Who's that?" asked Geraldine—woman enough to emerge instantly from her brown study the second when the man she was with noticed another woman.

"My wife," said Peter calmly.

He didn't miss the look of loathing that flickered across Geraldine's face. "The huntress?" she asked, as she might have said: "The murderer?"

Peter nodded. He was amused by the frown that passed across Geraldine's face as she surveyed Doris across the restaurant floor. It was the frown with which a woman recognizes that another woman is prettier than she thought.

A great many things amused Peter. Another was the fact that Doris had considered it worth while to come and take a good look at his . . . friend. Still another was the fact that she wouldn't get any reassurance from looking at Geraldine.

"Let's have it, Geraldine," he said. "You know me well enough now. What's this about the androids?"

She shook her head obstinately.

Peter looked across the room again. There was no doubt of it, Doris looked eminently desirable when she was with another man. Maybe she knew that. He admired her for coming. That was the old Doris, the Doris he used to be in love with.

The same kind of impulse which had made him call Doris and ask her where to take Geraldine came to him again.

"Doris Craddock, the huntress," he murmured. "She had a new adventure this morning . . ."

And he told Geraldine about the trap, the ninety androids shut in a prison of rock.

She jumped to her feet. "She did that?" Geraldine exclaimed. "I'll kill her! She . . ."

Peter grabbed her wrist and pulled her down. Diners at nearby tables spun round to stare at them, shocked.

"This morning!" Geraldine breathed. "Then there's still time . . ."

"For what?"

"To let them out, fool! The people she shut up——"

"People?"

"Androids, then! Let me go!"

"You want to go to Androida now?"

She didn't bother to answer that.

"All right," said Peter agreeably. "I'll take you. We'll borrow Doris's ship."

Geraldine looked at him uncertainly.

"I mean it," he insisted. "We'll even take Doris if you like."

"If we took her," said Geraldine furiously, "I'd kill her."

"Then we'd better not take her," said Peter equably.

They left together—and Peter noticed that Doris noticed.

At the spacefield no one was surprised that Doris's ship should be wanted at such a time—Doris did quite a bit of night hunting—but they were surprised that it was Peter who wanted it. The Controller hesitated, wondering if it was all right to let Peter take Doris's ship, but

not seeing any justification for stopping him.

When they were inside, Peter saw that the ship was already set for the run to Androida, on automatic, and merely had to trip a switch or two. He did so.

At 1G all the way—acceleration halfway, deceleration the other half—the trip took thirty-five minutes when Earth and Androida were in their present relative positions. This despite the fact that in thirty-five minutes' straight one-gee accel-decel a ship would cover only some six thousand miles. One-third of the power the trip took was expended in moving the ship through space at the required speed; the other two-thirds were needed as a sort of sacrifice at the altar of the great god Inertia.

At one-gee the time for the run at present would be seventeen hours—too long to enable people to do a spot of hunting between breakfast and lunch. The sacrifice to the god Inertia was worth it. It saved more time, more precious human time . . . for the men and women who had won it to look at and wonder how

they were going to fill it up without too much boredom.

Peter turned to Geraldine. They were still wearing formal evening clothes—it had seemed ridiculous in the face of Geraldine's impatience to suggest going home first and changing.

"So we're going to rescue ninety androids," he said mildly, as if that were a perfectly natural thing to be doing.

Geraldine turned to him quickly, hesitated, finally said nothing.

"I'm not complaining," said Peter, knowing she had all but told him her secret, "just wondering, that's all."

"You don't mind?" Geraldine asked.

Peter grinned. "If I minded, I wouldn't be here," he remarked.

Geraldine reached a decision. "I'll have to tell you. You *are* open-minded, Peter, aren't you?"

It was the first time she had called him Peter.

"You have to be, or . . . There aren't many people I'd dare tell this to. Peter, isn't it obvious? Haven't you guessed? I'm an android."

Peter didn't blink. It was a waste of breath saying that was impossible. She knew that as well as he did. She had to come up with a better story than that, and she must know it.

"Oh, there was a real Geraldine L. Smithson, of course," she went on quickly. "Otherwise I'd never have existed at all. I can't tell this story in order—I have to tell you things I discovered later, but didn't know at the time.

"The first things I remembered were on Androida. I must have been made on Earth and taken to Androida like every other android, but I've no impressions of that. My first conscious existence was among the androids, being hunted by men and women. Now do you understand my attitude?"

"If this is true," said Peter breathlessly, shocked out of his usual calm, "some terrible mistake was made—or you were the victim of a shocking crime. Because I know the androids, Geraldine, and you aren't, couldn't possibly be——"

"Let me go on with my

story," said Geraldine. "The story itself shows there was no mistake, that there was no shocking crime—except the one that's committed every day against all androids . . ."

Peter looked at her closely, and nodded. She didn't look crazy and he didn't think she was deliberately lying. On the other hand, what she was saying couldn't possibly be true.

The only thing to do was listen to the whole story . . . and if it was still impossible, it was a lie.

"Go on, Geraldine," he said quietly.

She looked away from him, at a blank wall, and spoke undramatically. "You can imagine what my life was like. I can't tell you a great deal more than you can imagine, because a new android hasn't very clear perceptions, can't understand many of them, and can't store them too well. You've no idea how much language helps you to remember things.

"We'd no language, of course, no tradition, nothing

but the vague herd-instinct that's built into androids. My group was hunted twice, and a few of us died. I didn't care in the least about that then, I must admit. I felt only a muddled sort of relief that it wasn't me.

"Peter, you're almost right about the androids. They go around in a stupid, muzzy, uncertain daze, as if their brains were about a hundred miles away from their bodies and communication wasn't too good. But they needn't always be like that. They needn't always..."

"Go on," said Peter again. There was conviction in this. Geraldine believed what she said, that was clear.

Though Peter didn't believe it, couldn't believe it, it was disconcerting how many little things about it made sense. Now that he had the key, Peter saw that from the instant he met her Geraldine had been talking, acting, as if she was of one race and he was of another. There was the way she'd called androids "people." Her passionate attack against inhumanity toward them. Her reaction when

he had asked why she wasn't married. Her hatred of Doris the instant she saw her.

"One day," Geraldine went on, "when I came back to the main group I found a woman and two men among them. Humans. Three humans and about fifty of us—fifty androids. But there wasn't any fighting. The three humans had weapons. They were keeping the androids at a safe distance, but they weren't killing us. They were asking questions, in fact.

"Of course, I didn't know then what it was all about. You can't appreciate an android's lack of knowledge and experience unless you've been one—unless you *are* one. No, they could have kept trying for fifty years and we'd still never have understood what they wanted of us.

"Actually, they were lost. It was weeks later that I discovered that. They thought we knew where their ship was.

"We knew in a vague sort of way that humans came and went on ships, ships they could get into but which would never open for us. But

we'd never heard of any of them being lost. In fact, the very conception of being lost was incomprehensible to us, because you couldn't be lost unless you had a place to go to, and we had none.

"All that day two of them stayed where they were while the other went out alone to look for the ship. I know now that was what they were doing. They knew it couldn't be far from their base, and if they kept on looking they were sure to find it eventually.

"We left them alone because they were armed, and because for once they were leaving us alone. They shot two people—androids, I mean—who came too close, that was all. They didn't let us mass close to them in case we rushed them.

"They didn't find the ship that day. At night they settled down to sleep, leaving one always on guard."

Geraldine hesitated, re-evaluating. She could never have told this story before.

"From the moment I saw the woman," she went on, "I felt drawn to her somehow. I didn't hate her as androids,

those that are left, automatically hate humans after they've been hunted once or twice. It's obvious now that before this I must have seen my own reflection in pools, and so this woman was familiar. I had no idea I was like her—that's the sort of idea androids simply don't get.

"That night I slept . . . I had no part in what happened. When shouts and screams wakened me, it was all over.

"Whoever the humans had left on guard must have fallen asleep. The two men were dead and the woman was injured. Round her lay all my group—all that hadn't run away. They'd attacked, but even asleep the three humans hadn't been easy prey. They'd killed about thirty androids.

"If the woman, the real Geraldine Smithson, hadn't been my model I'd have run like the rest, I guess. Or tried to kill her, and she'd have killed me.

"But I was so curious, so interested, not knowing why, that I hung around in the darkness until I was pretty sure that the woman couldn't

move. It turned out she had a broken leg.

"The first bit of reasoning I ever did was this: I worked out that if I could get her weapons away from her, the woman would be helpless and I'd really have her in my power. So I waited. The only two living things within miles were her and me.

"Presently she either fell asleep again or fainted. I crept up to her. And I got her gun."

Peter by this time was simply listening. Geraldine's story still couldn't be true. Androids just couldn't be like Geraldine. She wasn't the most intelligent woman he'd ever met, but her intelligence was at least average—for *humans*. And that meant that among androids she must have been . . .

But even apart from intelligence, what about her perfect figure, her taste, her dress sense . . . more immaculate than Doris—an *android*?

Looking at her made it impossible. She wore a low-cut white gown, and he could *see* that her breasts

were firm, strong, decidedly mammalian, not flabby and functionless, as in the most flawless of androids. He could *see* that under the thin, clinging stuff her belly was as taut and spare as Doris's, a virtual proof that she was human.

Her story was ridiculous on so many counts that any one of a dozen points would have disproved it.

But Geraldine was still speaking. "I looked after her for weeks," she said. "I didn't know why. I don't now. Perhaps it was to get some of her secrets from her, to become better and stronger and safer than any other android.

"Almost at once she started to teach me to talk. I took her to a cave I knew. She kept trying to get me to do something, but it was a long time before I could understand what it was. I thought she was trying to get me to give her her gun back. I'd buried it so that she couldn't find it.

"Later I discovered she wanted me to look for her ship. If she could get to it, she'd be safe.

"Almost the first day at the cave she took off her clothes and made me hide them. It was a long time before I understood that either, but it should have been obvious, even to an android. Naked, with a broken leg, she was like the rest of us. Nobody would believe she was a human, omnipotent, omniscient.

"She was quite right. She was safe. Later one or two androids did see her, and didn't give her a second glance.

"I'll hurry up with the story. I was slow to learn, but I did learn. I was getting on fine, knew the woman's name, the meaningless syllables which represented where she lived, knew how like each other we were, had a vocabulary of about two hundred words, and there was no telling what would have happened. I think she meant to take me back to Earth, show me off, try to change people's attitude to androids. She tried several times to explain to me that if people knew what androids were like, could be like, this persecution of them would be bound to stop.

"Neither of us knew anything about setting bones. And at last Geraldine became delirious. I don't know whether her fever was a complication of her leg injury or something different. Anyway, she was delirious for two days. Then she died."

Peter nodded, not arguing. Was it possible, he wondered, if something like this story had happened, the *other* way? Suppose it had been the android who died, and the real Geraldine who lived? That might explain some of this . . .

"I didn't know what to do," Geraldine went on. "I told you I could almost talk, but there wasn't the faintest chance of my being able to pass as Geraldine. Just think of it. I knew nothing, absolutely nothing, about Earth, about human relations, about spaceships, about anything but Androida and being an android . . . and I didn't know any too much about that.

"Nevertheless, she'd been determined to take me to Earth, and that's where I meant to go, somehow.

"I buried her. Then I got

out her clothes and figured out how to wear them. I got used to wearing them. I dug up her gun, found out how to use it, and practiced until I *could* use it. Then I set out to look for men and women."

Now, how was she going to explain this, Peter wondered. So far, everything in her story had been reasonable, everything except the idea of an android learning to speak and learning to use a gun, the idea not so much of Geraldine being an android as of an android being Geraldine.

"When I came across a man two days later, a hunter, I just let him find *me*, and talked as Geraldine had done just before she died."

"Huh?"

"I pretended I was seeing things he wasn't seeing, fell down, tried to get up, tossed about, and said a word or two here and there . . . I'd had two days to study delirium, you know."

Peter nodded half admiringly, half exasperated. She still wasn't stumped. Her story explained how an android could be accepted as a human being—if an android

ever *could* pass for a human being.

"I kept it up," said Geraldine. "That hunter brought me to Earth and I was taken straight to hospital. They never suspected, for how could they suspect? They merely thought at first that I was delirious, and later, that I'd had a mental shock that caused partial amnesia. I managed to keep a jump ahead of the doctors and psychologists . . . By the time they were seriously studying me, trying to find out my history, how I got to be like that, I'd already learned a lot.

"The nearest thing for me was when they were going to hypnotize me to discover what had happened. I found out just in time what hypnosis was like and wouldn't let them do it. It would have worked with me, I think, and the psychologists couldn't have helped finding out the truth."

"Did they teach you to read?" Peter asked idly.

She nodded. "For two days they were really puzzled about that. It didn't worry them that

I couldn't read, but when they found I wasn't even familiar with the printed letters they got to wondering how that could happen. But after two days I'd made such progress that they thought I was remembering. It wasn't that. It was because I'd realized how important reading was going to be to me, that anything I needed to know I was going to have to get from books—I spent every waking hour trying to learn to read."

She looked at him half curiously, half defiantly, to see what he had to say.

Peter by this time just didn't know. A big point was that she wasn't an android claiming to be a human, not any more. She was a human claiming to be an android—and why should she lie?

Yet it was impossible.

"Geraldine," he said, trying not to let his voice reveal anything, "Geraldine, why do you look like a woman and not an android?"

He went over to her, examined her closely.

"I must have been a particularly good specimen," she said steadily. "There is varia-

tion, you know. Some androids look like Franksteins. Some are very nearly . . . some are like me."

He prodded her and tapped her teeth. He was deliberately as physically offensive as possible yet quite clinical—so that a woman could not help resenting his offensiveness, while an android, sexless, could have nothing to resent.

Androids were made to look as much like human beings as possible. They had skin, flesh and blood, and their hair grew from their heads. Short of X-ray or murder, he couldn't *know*.

"An X-ray will prove it," he said.

Geraldine shook her head. "I can't let anyone take one," she said defiantly. "Peter, I've told you the truth. But can't you see, I can hardly tell anyone else?"

"But once they knew——"

"Once they know I'm an android—well, you know how their thinking will go from there."

He had to admit she was right. It was a regrettable feature of human nature that even scientists were capable of

believing only what they were prepared to believe, and if it were known *first* that Geraldine was an android, investigators would inevitably find thereafter that she was in all respects sub-human.

"What's the name of the hunter who found you?" he asked.

She didn't seem to resent his lingering incredulity. "Jack Mercury," she told him.

Peter knew Jack Mercury. He was quite a well-known hunter. Doris knew him well.

Peter looked at his watch. "We've still a few minutes before we land," he said. "You can hardly walk around Androida like that. I'm sure you'll find something more suitable to wear in there." He nodded at Doris's tiny dressing-room. Only after he'd spoken did he realize there had been a subtle, involuntary change in his manner.

He'd talked to her as if she were an inferior form of life.

Geraldine went docilely, however. And Peter, watching the door she had closed behind her, called Earth on the

radio. Only very rich men could afford to make private calls from spaceships, but Peter felt he had to know what Jack Mercury had to say.

He got Jack Mercury without delay. "Peter Craddock," he said. "Listen, Jack, what do you know about Geraldine L. Smithson?"

"I picked her up crazy on Androida once," came Jack's voice, thin but very clear.

"Crazy?"

"Well . . . maybe the doctors had another word for it, I wouldn't know. She was acting crazy. If you act crazy, you're crazy even if you're not, if you get what I mean."

"You mean you weren't sure she really was crazy?"

"All I can say is, she was crazy the way she wanted it."

"But you did pick her up, alone?"

"Oh yes. Why, does somebody say I didn't?"

"Thanks, Jack." Peter broke the connection just before Geraldine appeared in a pair of red slacks and one of Doris's dazzling white blouses. She didn't have Doris's dash,

but she had much more than Doris's know-how.

She couldn't be an android. She just couldn't.

If she was an android—just as a hypothesis—if she was an android, what had been done to the androids had been horrible. Indirectly, Peter had caused more deaths than Napoleon, created more misery than Hitler. Doris had more to answer for than the worst of the Roman emperors.

Because even if she was a very special android, which was obvious, anyway, Geraldine proved that every neuter had the spark, the divine spark that Peter and almost every other human being had always been sure, completely sure, they lacked.

If androids *could* be like Geraldine, what Peter had dictated that morning to Sylvia in answer to G. L. Smithson's letter was a lie.

If Geraldine was an android, no one must ever again murder an android; androids' rights must be recognized. Peter would have to fight for those rights as he had promised Geraldine he would. He would have to fight for

them independent of any promise.

If Geraldine was an android . . .

He found himself, over and over again, very nearly being guilty of the kind of thinking which asserted Geraldine couldn't be an android because it would be utterly horrible if she was.

It was dark when the ship landed. Peter knew that unless Doris had reset its destination, it would land in the precise spot on Androida from which it had taken off that morning. And from something she had said when telling him what had happened, he knew that the valley in which she had imprisoned the ninety androids was a mile or two to the north of where she had left her ship.

He armed himself and Geraldine. "You may not want a gun to use against the androids," he said grimly, "but you'll need it. You could never get them to believe, now, that you're one of them."

He locked up the ship and

they began to make their way north.

It was almost, but not quite, pitch black. Androida had no moon, and through the planet's thick, heavy, water-laden atmosphere not a single star could be seen.

Yet they could see, not much but enough. There was phosphorus in Androida's pools, just enough to provide the faintest of illumination, not so much light as a lessening of the darkness.

"I haven't been back here since . . ." Geraldine said presently.

"Since you were an android? What's it like, Geraldine? To live as an animal?"

She sighed. "When you're doing it, you're not observing. Just living. And you've nothing to compare it with—no Earth, no security, no law, no civilization . . ."

The night was silent, hot and oppressive. Peter had forgotten that nights were so hot on Androida. He'd left on his dinner-suit pants and shirt, though he'd taken off all the frills. Now he removed the shirt and threw it away,

wondering if some neuter would find and wear it.

"How does it feel to have men admire you—and know it's empty?" he asked.

"How d'you mean—empty?"

"You can't give them what they want, anyway. You can't marry them, can't have children, can't . . ."

She was silent.

"How does it feel?" he persisted.

"Sickening," she said briefly.

Well, was that the answer? He tried to imagine it. A neuter who looked like a woman, and wasn't, could still have pride in herself—in itself. To be admired, would that be sickening, amusing, delightful, or what?

Sickening, perhaps. Perhaps sex was sickening to those who had none. But more likely, if it was sickening to them, it was so because they had none. Because they were living creatures who couldn't reproduce themselves. Because they were jealous of other living creatures who could.

They saw no sign of life.

All was silent . . . they seemed to have the world to themselves. Perhaps they were lulled, hypnotized by the silence. And it was a long time since either of them had been on Androida.

When they were rushed in the darkness they were taken completely by surprise. There was a moment of panic, disbelief, inaction while they were frozen by the unexpectedness of the attack.

Then Peter dragged out his gun in such haste that it flew from his hand. No such catastrophe befell Geraldine. She brought up her gun—and hesitated.

There were perhaps a dozen of them, neuters, of course. Most of the hunters who died on Androida were the ones who had taken the androids too lightly. In a night attack like this they could be very effective . . .

"For heaven's sake shoot, Geraldine!" Peter shouted. "You can't play with——"

He butted one neuter with his shoulder and kicked the legs of another from under him. Somewhere over in this direction was his gun. He

cursed it for being black and dull instead of gleaming, easy to find in the darkness. He fumbled, straightened to knock another neuter back among his fellows.

Failing to find the gun, Peter whipped out his knife. Geraldine was almost hidden among the androids, and still she hadn't fired a shot.

"I can't . . ." she gasped. "I can't do it!"

Peter slashed at two more savages and reached her. He snatched at Geraldine's gun, to wrest it from her. If she wasn't going to use it, he certainly would.

Just before his fingers closed on the gun, Geraldine pitched forward at his feet. At the same time Peter stiffened in pain. An android, using a boulder as a weapon, had crashed it against his back.

Peter carved with the knife, bent quickly and swept up Geraldine's gun in his hand. He shot twice from ground level.

And after that it was all over. Two or three neuters got away. Nine lay dead about them.

The attack should never

have come to anything if Peter hadn't been clumsy, if Geraldine hadn't refused to shoot. As it was, it might have been the end of both of them.

Geraldine appeared to be stunned, no more. There was no sign of injury.

Not until Peter reached behind her to raise her head. His fingers sank into a warm, sticky hole.

The back of her head had been crushed with a stone. When Peter felt her pulse it was merely to confirm what he already knew—that she was dead.

He stood up, trying to sort out a tangle of emotions.

He wasn't angry or vengeful—he was simply overwhelmingly sorry for Geraldine. He felt pity, regret, exasperation that she should have died so unnecessarily, refusing to kill the androids who were trying to kill her.

They had died anyway, all except two. Peter might have died too, because she wouldn't shoot at the androids.

Yet he understood why she couldn't shoot, understood it and admired her for it.

He should have kept her safe because she was unique. There couldn't be anyone else like her. Perhaps there never would be. She must be the most outstanding android that ever was—the android genius of all time.

For just a moment or two he thought: Now she's dead I needn't do anything about the androids. They're nothing to me, and she's not around any more to show what neuters can become . . . I can cut this day out of my life, pretend it never happened.

But it was no use. He'd have liked to pretend it never happened, but he knew he wouldn't be able to. The fact that Geraldine wasn't alive to make him do what he knew he had to do made no real difference.

Android-hunting would have to be stopped—at once. What was to be done about the neuters would take a lot of consideration, but certainly if androids were, or could be, real, intelligent, thinking beings, they'd have to be treated as such—somehow.

Probably manufacture of

neuters would stop. Those that existed already would be trained for a job and set to work, like robots.

No, not like robots. That was just the point. They weren't robots.

It would need a lot of working out . . .

What an irony it was that those eleven androids who had attacked them had come close to prolonging the androids' collective misery for perhaps another hundred years, until another Geraldine Smithson showed that androids were *people*, not the robots that everyone thought them. If Geraldine and Peter had both been killed, perhaps no one would ever have known that it was possible for a neuter to hide and stay hidden among humans.

Poor Geraldine. He looked up. The first light of dawn was appearing: that meant it would be full day in less than fifteen minutes. He looked down at her again, a neat, pathetic little figure.

He didn't have to worry that the police back on Earth might think he'd killed her.

There were machines and drugs by which an innocent man could prove his innocence, even when everything looked against him. No, the police would know it was the truth. They'd also get the other story; they were bound to . . .

Peter looked down at Geraldine again, thoughtfully. He had to be sure. At first he hadn't been able to believe she was an android. Later . . . yes, now he believed it. The way she hadn't been able to shoot androids even in self-defence was the final piece of evidence.

Still, he had to be sure. He could take her body back to Earth in the ship. Perhaps he would, though there was a stringent health regulation that anyone who died on Androida had to be left on Androida. This was a very special case.

But before he broke that rule, *he* had to be quite sure.

He bent over one of the dead neuters.

Peter was no surgeon. He hacked at the ribs, stripped

away dead flesh, simply to see. And he saw.

Android flesh was like the flesh of raw fish, tough, rubbery, oily. You couldn't mistake it for human flesh, not once you got beneath the skin. It smelled different, rather a pleasant, sweet smell, a smell Peter knew. You couldn't mistake it for animal flesh at all, for it wasn't. It was culture flesh, as different from human flesh as plastic from wood.

It wasn't necessary to lay bare the organs, to strip the bones. Short of cutting the skin, you couldn't know . . . After cutting the skin, cutting deep, you couldn't help knowing.

Peter cut open a female android too, or rather an android shaped like a woman, just to make sure. She was exactly the same.

He turned to Geraldine's body, and hesitated. Once more he felt for pulse, listened for breathing. Yes, she was dead. Still he hesitated. Could they revive dead androids? He'd never heard of it being done, but it was possible. Perhaps Geraldine could be restored, with all her memory,

her intelligence, her knowledge.

No, her brain was damaged. Nevertheless . . .

Damn it, he was only making excuses because he was afraid to cut her open, afraid to *know*. Lying face up, clean, neat, peaceful, with no sign of the mess at the back of her head, she looked so nearly alive that he couldn't bring himself to loot her body for the information it possessed.

He made himself do it, nevertheless. He pulled the white blouse—Doris's white blouse—up so as to cover Geraldine's face. It couldn't watch him, accuse him any more.

Then he cut, decisively—the ribs, as with the two neuters. So that there couldn't be any possible doubt. There wasn't. He turned away, retching.

Geraldine was human. Human, not android. Beyond all possibility of error.

Why he retched was because one could cut up neuters and feel nothing. They were neuters, nothing at all. But cutting up Geraldine . . .

Perhaps her story had been half true. Perhaps an android

girl had cared for Geraldine Smithson—only it hadn't been the neuter who returned, it had been Geraldine, the real Geraldine.

She must have half believed her story, though. She couldn't have been so convincing otherwise. With her vivid imagination, her all-embracing sympathy, her boundless pity, she'd identified with the androids . . .

That was it, she'd identified with them. She *was* an android. Their miseries were her miseries. She'd try to stop mankind's inhumanity to them, if she could. Any way she could.

Peter sighed and turned away from Geraldine. Poor Geraldine, he thought again, but the thought wasn't quite the same now.

It was day. Around Peter lay nine dead neuters and one dead woman. But already he was feeling better than he had done a few minutes ago. If Geraldine wasn't an android, why, the whole thing collapsed.

Androids *were* robots, after all. They had no miseries, no feelings, no rights, no in-

justices were done to them. They were just machines, just artificial creatures for men and women to hunt.

And it didn't matter about Doris's ninety victims of the day before. He needn't bother to let them out.

He stooped, picked up his own gun, turned and went back to Doris's ship. He couldn't bury Geraldine, so he left her.

Anyway, she was dead. That was all that mattered. Poor, compassionate, sympathetic Geraldine.

It was a vast relief that now he wouldn't have to do anything about the neuters. The difficulties of the campaign he'd have had to fight swelled around him like Androida's mists.

He could let them swell now, look at them squarely, because now he wouldn't have to grapple with them.

They were in the past, like Geraldine.

He reached the ship, got inside. Those ninety androids imprisoned by Doris's artificial avalanche returned to his

thoughts . . . after all, to replace them was going to cost somebody four thousand five hundred dollars.

It wouldn't do any harm to let³ them out.

So he took the ship low over the valley, saw the poor neuter wretches squatting behind the blocked exit, staring at it hopelessly, and dropped a small bomb to blow a way through for them.

First he chased the neuters away so that they wouldn't be blown to bits, then dropped his bomb neatly on the outside. It made a neat hole wide enough for two men to pass through, abreast.

He didn't wait to see the androids make their escape from their prison. He set the ship on automatic for Earth.

Of course, he hadn't needed to release the neuters. He'd done it simply because it was a waste to leave them . . .

No he hadn't. He admitted frankly to himself that he would never kill another android as long as he lived. Geraldine had been a human, not an android, true—but he'd

had a fright. He'd never harm another android.

He didn't want Doris to go on hunting either. Could he stop her? Yes, of course he could stop her. She only hunted because. . . .

Well, she only hunted as a substitute for something else. Women would never hunt if they had the . . . the something else. And Doris was going to have it. Anything so long as she stopped hunting.

It would be nice to be in love with Doris again. It had been far too long . . .

And perhaps LOC could pull out of Androida. Perhaps he could trade LOC's android interests for something else—a bigger piece of Exotica, perhaps. Or he might go ahead with that scheme to turn Ceres into a super road-house, a stepping-stone to the outer planets. It was a gamble, certainly.

The less he had to do with androids in the future the better he'd like it.

Poor Geraldine. Poor, self-deluding, likeable Geraldine.

Poor neuters.

But that was silly. Hadn't this shown that neuters were just neuters? That he didn't have to take any action . . .

Yes, but it had given him a fright.

He called Doris by radio. After all, what was the use of having money, being able to do things like that, if you never did them?

She'd be asleep in bed, no doubt, but he didn't care. He waited.

"Doris?" he said, as a sleepy voice came on the line. "Will you marry me?"

He laughed at her answer. "No, I'm not drunk—and you must be if you don't know my voice, even from space . . . Doris, I'm sorry. I don't know why I've been acting like this. Trouble is, it's easier to start than to stop——"

He listened to her for quite a while, a smile he wasn't aware of breaking over his face.

"The same goes for falling in love," he said at last,

gently. "It's easy to start, but not so easy to stop. We always knew we were right for each other, didn't we, even when things were worst? This time, let's do it right."

She had nothing to say. Peter still had plenty, but he suddenly remembered that it wasn't an ordinary 'phone call and said rapidly: "Sorry darling; if I don't hang up I'll be a poor man. See you in half an hour. And . . . can I come into your half of the house—without knocking?"

When he'd hung up he looked involuntarily at the closed door of the dressing-room, just as he'd done the last time—just before Geraldine appeared.

But he wasn't going to think of Geraldine, or the androids, or Androida. They weren't his business any more.

He was going to start a new love affair with the woman who, when all was said and done, was his favourite woman.

What Atomic Radiation Does

by H. J. CAMPBELL, B.Sc.

First story: A slant-eyed old man sits dreamily in a gently tossing boat, idly brushing a grey dust off his clothes and picking fish from the water. He knows nothing of science, little of the world, and has lived at peace among sacred memories of his ancestors. Some months later he is buried, partly because he is dead and partly to hide the ghastly ulcerated sores that cover his pale, emaciated, practically limbless body.

Second story: A slant-eyed old man sits dreamily in a rigid chair, alone in the lead-lined room. He knows nothing of science, little of the world, and has lived at peace—until the pains in his throat began. He gazes with wonder at the giant instrument that points, like a futuristic cannon, at his neck. Some months later he is sent home, if not cured, at least with a few more years to live in the bosom of his family.

These stories have several things in common. The most important common feature from our point of view is that

radio-activity is in the background of both of them. Of even more importance—to us, and to the men in the stories—is that in one case the radio-activity, though low in intensity, is diffuse, whereas in the second case the radio-activity, though highly intense, is considerably localised. Therein lies the difference between life and death.

What, fundamentally, is the action of radioactive particles? To know this, we must first know what radioactive particles *are*. They are little bits of—well, they are just little bits. They are not matter in the traditional sense, for they are *parts* of atoms, not composed of atoms.

The particles differ among themselves in the amount of energy they represent. Some are extremely high, some are just high. All of them are pretty energetic. Their energy depends upon their mass and their velocity. In the main the faster particles are the most energetic. The more energetic the particles are, the more they penetrate into things.

Of the particles produced by an atomic bomb explosion, the alpha-particles penetrate least, then come the beta-particles, and, most penetrating of all, the gamma rays.

When a highly energetic particle hits an atom, it knocks off a bit of the atom, from the shell or from the nucleus. The details are not important from our present point of view. The bombarded atom ends up ionised, that is, electrically charged. All this is a build-up to understanding what happens when radioactive particles meet living tissue (or anything else, for that matter). They cause ionisation.

You may think that there's little harm in that. After all, a good many atoms in the normal body are ionised anyway. The salt in the blood, for instance, is really made up of ionised sodium atoms and ionised chlorine atoms. In fact, atoms will only engage in chemical reactions when they are ionised. And there lies the rub. The ionised atoms in the normal body are *meant* to be in that state so that they can engage in vital chemical reactions. But the ionised atoms in the irradiated body engage in reactions that have no natural right to

occur. Often the kinds of reactions that go on among irradiated atoms bring about the death of the cell, or at least prevent the cell dividing and reproducing itself. The mathematical physicists have calculated that if only one in every fifty million atoms of the body are ionised, death of the body results.

When the radiotherapist points a radium (or cobalt, or gold, etc.) 'gun' at his patient's throat, his purpose is to produce so much ionisation in the tumour cells that they lose their abnormal capacity to divide and multiply, thereby restricting the growth of the cancer and preventing the obstruction of vital organs.

The great difference between therapeutic irradiation and the accidental kind is that the 'gun' produces a very high intensity bombardment over a small area, whereas the bomb causes either high or low (depending upon how far you are from it) intensity irradiation over a large, probably total, area of the body. Even with the 'gun' and with the most careful precautions structures along the path of the particles are damaged as well as the tumour. Nerves lying between the tumour and the gun often become par-

tially or totally inactive. And the skin immediately in front of the 'gun' undergoes irreversible degenerative changes. Indeed, the cracking of the skin is the factor which sets a limit to the number of 'shots' of radiation given to a particular patient. Nevertheless, in therapeutic irradiation there is no great danger of widespread effects.

How different for accidental irradiation! There are several ways in which this can happen. There is irradiation through the skin due to bombardment of the body from particles in the atmosphere. Usually under these conditions there is also contamination through the mouth to the lungs—a mode of entry that is avoided by the use of special masks. Then there is contamination through the mouth to the stomach by the ingestion of radioactive food and water. And lastly there is contamination directly into the blood stream via cuts and abrasions. Whichever way it goes, contamination is pretty widespread, though, of course, certain organs are more affected than others.

Contamination via the respiration is often the most dangerous route when the intensity of radiation is ex-

tremely low. Whereas only a small amount is falling on the exposed parts of the skin, a fair amount is being taken into the body with each breath, so that a radioactive deposit is built up in the lungs. The victim soon begins to froth redly at the mouth and dies of pulmonary hæmorrhage.

If the radiation enters the body with food and water, naturally the alimentary canal is extensively damaged as well as the rest of the body. No doubt there would be serious defects in the digestive mechanisms, but the patient usually dies before these show themselves.

Irradiation through the skin will cause damage in proportion to its intensity. The more intense the radiation, the deeper will the particles penetrate. Not that it matters much if the irradiation goes on for a longish time. The only difference is that the irradiated person will die a little sooner. But if the irradiation is of short duration, then the difference in intensity may well mean a difference between life and death. In Hiroshima there was a building of many storeys near the site of the explosion, with people on all floors. The

severity of radiation sickness decreased from the top downwards just as the intensity of radiation had so decreased. Those at the top died pretty quickly—purely from radiation, not fire or blast or anything like that; those at the bottom are still alive. Those in between died at various times between then and now.

This was because although intensity of radiation was pretty high for all levels of the building, the people were evacuated quickly and so the *duration* of exposure was quite short. The unfortunate fisherman of our first story, however, was exposed to extremely low intensity radiation over a very long period. There was the usual accumulative effect, and he died.

Irradiation through the skin, or general body surface, affects all the tissues to some extent and a few organs to a much greater extent. The most sensitive spots are those where cell multiplication is normally going on, such as the reproductive organs and the bone marrow. Atomic particles draw no distinction between normal and cancerous tissues; they reduce or destroy the multiplying capacity of both. Thus it is that

general irradiation causes sterility, by calling a halt to the series of cell divisions that lead to maturation of the reproductive cells—sperm and ova.

Of course, another site of rapid cell multiplication is in the embryo. One of the most poignant tragedies of the Japanese explosions was the abortions and stillbirths that affected the pregnant women of the region. None within a mile of the bomb produced a child, and very few a good deal further away did so.

Sometimes the multiplying activity of the cells is not entirely destroyed under irradiation, especially if the person is a couple of miles away from the centre of the explosion. The reproductive organs then go on producing germ cells. The sinister question then arises as to what kind of germ cells, and we begin to think of that dread word **MUTATION!**

It has long been known that in experimental animals and plants, irradiation may affect germ cells in such a way that the resultant offspring are, to say the least, highly atypical. They are mutants, freaks, sideshow creatures whose genetic heritage has gone widely astray. So far, accord-

ing to the official reports, no sign of human mutations following the Japanese explosions have appeared in living persons. Lethal mutations *have* occurred, and these pathetic offspring, conceived long after the bomb echoes died away, never saw the rising sun of their homeland. But the bombs fell only some ten years ago. There is time yet for mutant characters to appear when the children reach adolescence or maturity.

Apart from its effects on the reproductive system, general irradiation stabs like a torch-beam at the bone marrow. It is in these bony cavities that the cells of the blood are formed, after long series of cell divisions. Irradiation puts a brake on such divisions and there is a greater or less shortage of both types of blood cell, red and white.

The lack of red cells produces anæmia. Many kinds of this condition are easily put right these days, but *not* the radiation-induced type. Here you have permanently destroyed marrow tissue; blood cells will never be formed there again, no matter what you may do. If the irradiation was not *too* severe, and the angels smile, the person might, in time, build up enough new

marrow to keep himself going. But his chances are slender, and it takes an awful lot of someone else's blood to keep him alive during the attempt.

Apart from anæmia due to a shortage of red blood cells, there is another horrifying concomitant of severe irradiation—*hæmorrhage*! For some ill-understood reason, many of the blood vessels become fragile and permeable as a result of irradiation. Blood leaks out in a hundred places into the interior spaces of the body. This happens, too, in various kinds of accidents from car crashes to gun shot wounds. In these cases prompt transfusion and a bit of surgical intervention saves the day, and the patient. The body has some pretty marvellous mechanisms for dealing with mechanical hæmorrhage—but none for irradiation hæmorrhage. It is not a question of transfusing blood and sewing up the vessels. Giving blood to such a patient is like pouring water into a collander; it just goes right through into the internal spaces with the patient's own blood. You can't sew up the vessels, partly because only some of them are broken (the others are merely permeable) and partly because the broken

vessels are all over the body—a dozen dozen operations would be necessary, and no human could stand the strain. So most often the victim bleeds to death, *without a drop of blood leaving the body!*

Bacteria are ubiquitous. Germs of most diseases are floating about all the time in all places. Millions of people have had diphtheria without knowing it—and many similar diseases. They pick up a mild form of the germ when they are in good health and conquer it with little more trouble than a sore throat, a headache and perhaps a little diarrhoea. On such occasions they have pulled through the infections because they possess an instantly mobilised army of white blood cells. These helpful little cells go around grabbing at every stray microbe they come across, eat it and destroy its toxin-producing ability.

Now, the victim of radiation sickness may well have practically no white cells in his blood. Certainly he will not have enough to come hurrying to answer the clarion call of infection. And when he cuts himself, the germs of the air will enter his blood stream against little or no resistance. Once inside there will be

practically no check on their multiplying powers; thus they will spread all over his body.

Even the bacteria that have lived in peace with him all his life—the denizens of his mouth and skin wrinkles—will attack him and set up festering yellow ulcers all over his lips, gums, tongue and most parts of his body, until he is a mess of painful, watery sores on the outside and a fever-hot cauldron of poisonous toxins on the inside. All that and hæmorrhage too.

But there is more to come. Irradiation upsets the calcium and phosphorus contents of bone. These hard constituents waste away and the bone becomes brittle and frail. A little knock and it will splinter. A little pull and the joint will give way. A little roughness—the kind of thing that happens a dozen times a day—and the limb will part company with the body.

All in all the victim of severe irradiation is in a poor condition. But there is no need to be disheartened. There are two ways of preventing such horrible events. One is to take all the precautions recommended by the authorities. The other, and better, way is—*not to drop the bomb.*

It was very strange about—

Mr. Culpeper's Baby

by KENNETH BULMER

MR. CULPEPER LIVED IN mortal fear of his baby.

He pushed the new perambulator along arid Sunday morning suburban streets and avoided the admiring glances of passers by. His shrewd, sharp-featured Cockney face felt as though it had been dipped into wax and had set, stiff and unmoving. The baby lay blissfully asleep, wet mouth open and fat compressed cheeks soft against the pillow, making a picture over which white-haired old ladies might croon in vicarious pleasure.

Yet to Mr. Culpeper the baby had opened vistas of horror so wide that his conventional mind shrank back in fear of the unknown.

He could remember the time, such a short while ago, when he was the proudest suburban father in this Sunday morning constitutional. Of course, the baby had been unusual from birth—it had

never cried. And he had even been complacently proud of that! The baby never cried and he had never connected the two strawberry marks on the forehead just where the hairline would be with that; but now he tortured himself as only the imaginative can with shocking surmises and reluctant devil-extracted wonderings.

Mr. Culpeper's baby had never cried like other children and although his neighbours, in their neighbourly habit, might suspect all manner of repressive devices, they could prove nothing. There was absolutely nothing of that sort to prove. The baby never cried—yet Mr. Culpeper could recall with microscopic exactness the first time it had cried. It was some measure of his present mental turmoil that that moment in all its apparent triviality should remain in his mind as the first omen.

No-one, apart from Mr. Culpeper and his wife, knew anything of this crying. Out of a clear, calm Sunday afternoon, with the aspidistra mellowing in its pot, the baby began to scream. Its crying ended as suddenly as it had begun, on a thin high note of babyish hysteria. When the resultant domestic flurry had quietened down Mr. Culpeper noticed the canary lying stiff, wrinkled claws half curled, dead in the sand of his cage.

Of course, woman like, Mrs. Culpeper at once took this to be a wonderful example of the love baby had cherished for his dear departed friend of the animal kingdom; but the prestige she gained from the phenomenon of baby's never crying was more important. Torn between two desires, she divulged to no-one the cause of her firm belief in her baby's adult love of animal friends.

Mr. Culpeper modestly acknowledged that he had been rather sharp at school and, after all, blood will tell; but he was a trifle wary of his

wife's theory. He thought privately that perhaps cutting teeth had something to do with it. Looking back, now, he could only blanch at his own blindness. And yet, there was no getting over it, that had been the only time when the baby had cried.

The second time was much worse.

He had been taking his normal Sunday morning constitutional, much as he was now, with the baby lying like a creased gnome, blissfully asleep. Mr. Culpeper pushed the perambulator with the conscious dignity of parenthood. He had chosen to take his stroll through the quiet streets of his own immediate neighbourhood only partly because of their tranquility. He went that way mainly because strangers would not know that this was Mr. Culpeper's baby who did not cry.

Turning sharp down beside the house where the new doctor was soon to live he saw aproned workmen moving the old doc's furniture out. The old doc was standing on the porch wistfully surveying

the proceedings. He greeted Mr. Culpeper kindly.

"And how's that young rascal coming along? Seems only yesterday you were trying to knock my door down—and now look at the size of him."

"Yes, he's growing fast, all right." Mr. Culpeper fussed with the perambulator cover. Brawny workmen, tailing a rope, pushed him to one side with a muttered apology. "Moving on a Sunday?"

"That's what you get for being a G.P." the old doc said heavily, spreading pudgy hands.

The workmen had a safe swung out of the first floor window and were jockeying it down with the nonchalant skill of years of experience. Mr. Culpeper coughed awkwardly, then blurted out: "Those birthmarks—do birthmarks get bigger, doc?"

"Bigger? Of course not. Birthmarks stay about the same. Here, let me have a look at the little beggar." The old doc stepped off the porch.

Mr. Culpeper's baby opened its eyes and screamed.

Looking upwards in dis-

belief, Mr. Culpeper saw, as in some slow motion film, the heavy safe slip its ropes and topple downwards, crunching down on the old doc.

When Mr. Culpeper could think about the incident without that terrifying nausea bubbling up in him he felt that however smart he may have been at school, he couldn't quite see his baby crying because it had seen the safe slip. Try as he would to picture himself as the father of a superman, with all the awe-inspiring worries that entailed, he sought another answer. An answer that lay among the familiar minor catastrophies of a healthy baby's negotiation of the business called growing up.

As the suburban days passed one alike after another and the legend of Mr. Culpeper's non-crying baby grew, he found it easy to forget that particular problem and fall back on his wife's comforting creed: "Baby doesn't cry. That's the important thing."

But still some little doubt lingered. Mr. Culpeper had only vague ideas about atoms

and genes; but, with his usual direct approach he joined his local Civil Defence unit and tried to understand all they told him, among other things, about atoms and radiation and the necessary shielding should anything occur.

August Bank Holiday came round, bringing with it the usual festivities. That Monday afternoon saw the Culpeper family wedged amongst the shouting pushing crowds, enjoying the traditional attractions of the fair. Whistles blew, rattles machine-gunned, canned music from a dozen different directions ground into a blatant uproar. The rubicund face of the cheery Londoner, strenuously relaxing, shone with a rosy patina of heat and sweat and dust.

Atomic particles were very far from Mr. Culpeper's mind.

Mrs. Culpeper, because the baby was always 'good', carried the infant carefully among the throng. The perambulator would have been worse than a fly on fly-paper.

"Roll-up! Roll-up! Every one a winner! Every winner a prize!" Gorilla voiced barkers bellowed the plaudits of their

shows. Shiny, gigantic brass steam engines hooted with a genial expanse of power, a few diesel tractors mumbled in monotones. Puffs of steam rose past the flags and banners fluttering against the sky. Up there, up past the scalloped edges of the tents of lesser attractions, way up, red and green cars, gilded and glistening, dipped and swung, rivaling Phaeton and his flaming chariot.

Mr. Culpeper, amid all the din and confusion, arched back his head and regarded those leaping cockleshells framed between raking timbers. The perspective was fantastic.

"My Army assault course was child's play compared with that," he confided to his wife. She smiled, and tucked an end of lace more securely round the baby.

A crowd of laughing teenagers clambered into the impatiently quiescent cars, like Arab steeds, all blood and spirit, chafing to be off. A toot-toot from the shiny whistle, a resonantly clanging rendition of a popular tune,

and the contraption was in full flight.

Mrs. Culpeper, Mr. Culpeper's baby serenely cradled in her arms, approached the prize-bedecked shrine of "Roll your pennies, Ladies and Gents! All a matter of skill! Roll 'em up! Roll 'em up!"

Mr. Culpeper strolled after his wife and stood at her side as her penny rolled down its slot of destiny and undulated flat like a disappearing jelly.

"First time a prize, Lady!" The showman was resigned to these brief flashes of beginner's luck on the part of his customers. He'd have to remind his mate to paint that black line a trifle thicker.

"Just like I always says, every one a winner, every winner a prize. What d'yer want, Lady? Nice baby's bonnet 'ere."

Mr. Culpeper spoke in sudden anxiety. After all, it was something of an occasion. "No—er, no. I don't think we want that. What would you like, dear?"

The showman couldn't have his time wasted like this.

"Roll up! Roll up!" he shouted to keep himself going.

"'Ere you are, sir." Then, to his mate in just as lusty a voice: "Give that man a Peruvian Gold Ring!"

Mr. Culpeper's baby opened its mouth and screamed.

Down all the aching, dusty corridors of time: from the Rebel Yell; the British Huzza; the fanfares of the Knights; the seven-fold Jericho cry; even to the silver trumpets of ancient Egypt, all, as one, must have accepted into their august company the scream of Mr. Culpeper's baby.

There was a tang of tar in the air—and a sudden creaking.

Where a moment before the sun had shone thickly on thousands of people milling with a sound as the sea on rocks, now those thousands stood gazing in horror, pointing and gesticulating. They began to flee panic stricken from the centre of the Fair and other thousands ran in confusedly from all sides. The creaking grew louder.

That airy toy, that chariot of the gods incarnate on a London heath, was gaining an ever wilder and more wild momentum. The gilded cars

spun with terrifying rapidity, every second faster and yet faster still. The whole lacy framework seemed dancing in drunken abandon, seemed to be throbbing with a beat that reached down to the very roots of the earth.

In all the confusion Mr. Culpeper looked at his baby. It was crying quite normally now, with babyish spurts of tears and soft mulish whimperings. Occasionally a cloud drifted in shadowed wrinkles across its face. The baby did not move, did not clutch with its hands or kick with its legs; but when the towering painted framework, trailing its gilded cars, crumpled like a heap of matchsticks and matchboxes into a halo of dust across the fairground, the baby screamed as though being tortured with red hot pincers.

Mrs. Culpeper was crying herself in distress, ineffectually dabbing with a wisp of handkerchief alternately at her eyes and at the baby. Mr. Culpeper ran with hundreds of others to the swath of destruction across the

booths and tents. Dourly won Blitz experience had not been forgotten; men and women worked together clearing the wreckage.

It was hours before all the broken bodies had been dragged from splintered holiday coloured cars, the dead covered reverently with blood-stained coats, the injured made as comfortable as possible on dry heath grass.

Mr. Culpeper's back ached and his throat was dry. He put down his end of the stretcher and saw his wife come through the growing darkness, the baby still whimpering in her arms.

"Come on, dear," she said, concern making her voice ragged. "You look worn out. The ambulance men can finish; there's nothing left for you to do now. Come and have a nice cup of tea."

"All right." Mr. Culpeper stood up, eyes glazed, and turned away from the stretcher. "Where's my coat?"

Two St. John men came over, looking hot and tired in their blue serge uniforms. The boy on the stretcher lay very still.

Mr. Culpeper fumbled his way into his coat, then looked at his baby. The tiny face was swollen with crying, as an adult's face unused to tears swells after protracted sobbing. As Mr. Culpeper watched that dark shadow passed again over his baby's face, like an arm of wind ruffling a cornfield in the sun. Mr. Culpeper's baby screamed. And stopped.

The two St. John men picked up the stretcher. The one at the foot looked down and said: "This poor chap's a gonner, too. Just snuffed it as we got here. He'll be about the last, I'm hoping." He straightened and the stretcher with its limp burden swayed. "Better get along home now, sir. Have a cup of tea and you'll feel better."

For Mr. Culpeper's face was like granite and his whole body stiff and rigid, far too petrified to allow him to shudder in self relief.

The whole episode at the fair had been a grim business; but he'd seen far worse at Anzio. It was the baby. He must try to rationalise this thing, somehow. He had to,

for the sake of his own sanity.

All the way home on the bus his fellow passengers would not stay in focus; they kept swinging to and fro, growing enormous as they approached him and dwindling as they receded. His head felt like an enormous balloon from which he could look out onto the world only as through a tiny chink.

He knew with a despairing sense of finality that he could not avoid the issue any longer.

Tiny events had slowly gathered like a snowball until now they threatened to engulf him in an avalanche of insanity. Mr. Culpeper was afraid, with that deeply buried inner sense stemming from the caves of pre-history, that he knew why his baby did not cry. No, that wasn't quite correct. Even with his head stuffed with cotton-wool he could still try to be accurate. He knew *what* made it cry. That was it—he had a brief, bitter struggle to prevent himself drowning in hysterics aboard the bus—he knew what made his baby cry.

Mr. Culpeper did not remember any more of that

day's doings. His next coherent memory was of opening his eyes on this Sunday morning's sunshine falling cheerily across the folded newspaper at the side of his breakfast tray. Sunday morning. A time apart, in which all our Saturdays may be forgotten, lost behind dim glass.

Mr. Culpeper cracked his egg with nicely judged taps and unfolded the newspaper. Coal-black headlines jumped up at him. And then into his Sunday morning calm the previous Saturday's catastrophe erupted, brushing away all logical thought and bringing him starkly face to face with the personal problem that had tormented him on the bus.

His line of thought led him naturally to read the news item which had been given second place of honour beneath the 'Hampstead Fair Tragedy.' He read of weighty deliberations between the heads of nations and notes and counter-notes; but he was seeking, avidly and yet almost without conscious volition, for any scrap of

news dealing with nuclear weapons. He had already come to the conclusion that he had never in his life, to his knowledge, been exposed to mutating radiations. The oft-discussed possibility that the latest thermo-nuclear bomb was capable of spreading its foul pestilence halfway round the globe, scattered abroad on the four winds, fascinated and repelled him. That could be the answer . . .

He was the father of a monster. Or was he? Just because his baby cried—cause and effect? The Herald was not the King. He tried to bolster some comfort from that; but in his situation nothing could bring relief. He had to accept the fact that his baby was not normal. He was past the stage where he could try to dismiss the whole thing as a linked series of coincidences. He pushed the tray back, his breakfast only half-eaten, and stood up stiffly. His back still ached from yesterday's exertions and there was a tight, pinched-in pain between his eyes.

He came to a decision. Try to act normally; he would

take his normal Sunday morning constitutional this morning, treat it just like any other week-end.

And so here he was, walking back home to the Sunday dinner being cooked by Mrs. Culpeper, his mind still clouded with nightmare after-images of the past weeks. He tried to push the unwelcome thoughts away, fill his mind with gourmand expectation, but roast beef clashed with safes and gilded chariots. He could still smell the dust in his nostrils, taste it flat and gritty on his tongue—could still see that dark shadow flit over his baby's face like a grasping hand.

Mr. Culpeper wheeled up to his porch and halted the perambulator whilst he fumbled out his key with fingers that were stiff and unmanageable. He leant over the perambulator, inserted the key in the lock and opened the door. Bent over as he was, his face not six inches from the baby's, he heard a faint sussuration.

He glanced down, panic washing over him.

That fateful shadow was

fading from the baby's tiny features. The two crimson birthmarks were glowing with a throbbing life. The eyes disappeared, the nose wrinkled up, the dewy mouth puckered into a quivering O. Mr. Culpeper's baby screamed.

On that instant a blast of air cannoned down the passage, ripped the two pictures off the wall, tore off the pram's hood and knocked Mr. Culpeper sprawling.

A thudding explosion subsided in tinkles of smashing glass and crockery. There was dust in the air. Mr. Culpeper did not need to go into the kitchen. He knew what he would find there.

Gas explosions in confined places, without shelves of crockery, are deadly enough. With the crockery and with glassware thrown in, they are also messy.

The Vicar called a few nights later. With his helpful philosophy he would have been a balm to any other man. To any man without the knowledge with which Mr. Culpeper was trying to live.

As his kindly voice rumbled

on, soothing even in its hypnotic monotone, Mr. Culpeper sat apathetically, his hands hanging down between his knees. The Vicar talked until quite late, interrupted only when he paused to take snuff, an academical habit helping to bring him nearer in spirit to the dusty theosophical tomes over which he delighted to pore. The room grew slowly darker, until Mr. Culpeper could no longer make out the form of his baby lying peacefully in the cot.

It took a great deal of courage for him to frame the question to himself: "If it's *my* baby, then it's my flesh and blood. But what *else* is there in its mind? Or soul? Or ego? Or what? What nameless sort of monster have I brought into the world?"

The Vicar was rumbling, almost unheeded by Mr. Culpeper, to a predetermined finish.

"So you understand, my son," he was saying. "All these things must be borne in the light of eternal human suffering and eventual glor-

ious change into the life that awaits us all hereafter."

There came an insubstantial tremor of sound from the cot.

"Now I must be leaving you," the Vicar continued, picking up his black hat. "I fear that the work of the flock grows heavy of late. There has been much backsliding. Modern youth seems ever more to become as Children of Edom. Let us hope that the name of Caleb's third child will not fit them."

Mr. Culpeper heard all this only when fragments percolated the waves of sound that inundated his mind. He could scarcely control the shaking of his hands. His forehead was damp. There the noise was again—only louder, dreadfully loud. He could not see his baby and he was unnerved with the desire not to hear it.

What had the Vicar said: "Now I will be leaving you?" He would be leaving—the floor appeared to heave suddenly under Mr. Culpeper—or would he? Mr. Culpeper's hands were now shaking so much that he gripped them

together in a twisted knot, almost like a man in supplication. Perhaps Mr. Culpeper would be the one to leave.

In his imagination he could see only too plainly that dark shadow rippling across his baby's face, heralding the solemn approach of something—someone? *He* might be coming for either one of the two men sitting in this darkened room.

Yet, through all the turmoil in his brain, he was still aware of that basic query. Was his baby simply announcing this dread advent—or was the baby bringing it?

"Thank you, Vicar," he managed to say, with the feeling that his collar was decapitating him. "You have been very kind——"

"Why, Mr. Culpeper——" The Vicar paused, as though perplexed by this show of emotion now when he was leaving.

Mr. Culpeper listened with every cell in his body, straining to catch the first minutest titillation of the air, straining to hear the sound he was in terror of hearing.

His baby gave a faint unintelligible hissing of sound.

Mr. Culpeper sprang to his feet, eyes wide, toppled his chair over backwards and gazed fascinatedly from his baby to the Vicar and back.

He had the look of someone expecting to see Armageddon in this dim room.

Mr. Culpeper's baby sneezed.

Mr. Culpeper collapsed into hiccupping, helpless laughter. He just couldn't help it. His nerves had been scraped past endurance and now the Vicar's snuff had nearly brought on a nervous breakdown. He gamboled crazily over to the cot and seized his baby in his arms and clasped it to his breast. He was slobbering with released emotions.

"Really!" gasped the Vicar, shocked.

Mr. Culpeper's baby did not cry at this rough handling so late at night. It just clucked disapprovingly and went back to sleep.

A long time after the Vicar had gone, with the door slammed indignantly behind him in a hollow boom, Mr. Culpeper was still sitting

hunched up in the darkened room.

His thoughts were brown and murky. Mrs. Culpeper and the brief bright days of their honeymoon. And then he was taking his key out and bending over the pram—again and again. He remembered, indistinctly and at odd intervals, the fairground and the Peruvian Gold Ring that his wife had never had. He thought of many things there in that quiet room. The rush of dark wings that mortal man could never sense until the last expiring instant. His appalled vision seemed concentrated into an inner spiral of a descending well, dropping headlong into echoing depths.

At length he roused himself and switched on the light, blinking at the blaze. With robotical actions he prepared a frugal supper, going through the routine of accepted practice. Bread from the bin. Butter and cold meat from the cupboard. A long, thin ham knife from the drawer.

"What am I to do?" he asked aloud. "The Herald is not the King . . . That's true enough. But which is it?"

His voice trailed off into silence. As he placed the knife by the bread a dazzle of light from its edge shot into his eyes.

"Cold and clean." His fingers tightened spasmodically. "Not like the safe, or the fairground cars, or the stove. Cold and clean." The room was growing chilly. It was quite dark outside.

He picked up the knife. Even when he was standing over the dark shadow of the cot he was tensed, waiting for some sign, some indication that what he was doing was ordained, out of his control. The baby was very quiet.

He lifted the knife, poised it over his head. There was a shattering tattoo on the front door. The knife clattered onto the floor and Mr. Culpeper staggered away from the cot. Somehow he managed to open the front door.

"Mr. Culpeper! Get down to the post right away—there's been a general warning! God knows what'll happen now."

In the gloom of the porch he recognised a Warden from his Civil Defence Post. The

steel helmet was an ugly, jolting reminder, symbol that the whole world was tormented besides the microcosm of Mr. Culpeper.

"All right, Alec," he got out, swallowing. This sudden summons in the night had shaken him; broken the dream sequence he had been living. "I'll be right, down. Oh—and I'll have to fetch the baby. No one here to look after——"

"Yes. All right. But hurry! I've got two more streets to do yet." Alec's boots clattered off into the darkness. Mr. Culpeper left the door open while he changed and caught up the things he would need. Then he wrapped the baby in a huge blanket and sprinted off for the C.D. Post.

Why bother about just what the baby was? If the lectures he had attended were anything like the reality, in a few hours he might not be worrying about anything at all. And yet—even the thought of London reduced to radioactive slag did not appal him in quite the same way as the phenomenon of his baby. He knew there were spatial and temporal warps possible in

the incadescent core of a hydrogen bomb; but what sort of matter, substance, energy, was warped by the brain of his child?

Inside the dumpy brick and concrete building there was organised chaos. Wardens were congregating around this point like moths round a flame and yet there was a quiet orderliness that months of training had drilled into them without their being aware. And Mr. Culpeper fitted into that mould; without quite being aware of how it was done the past weeks of nightmare faded under the impact of a more general holocaust. He began to feel ashamed of the way he had picked up the knife. The baby was being cared for in the corner by a matronly First Aider—although, truth to tell, the baby was fast asleep.

After Mr. Culpeper had been integrated into the pattern of what was going on and had carried out his personal checking schedule, he had time to think about himself again. Warning Yellow was on the board, which might, as

Alec had phrased it, mean anything. Even as he looked, his vision partially obscured by the tilted helmet rim, Warning Orange screamed at him from the light system. He gulped.

A ruddy-faced man was speaking from a chair where he was drinking beer.

"... and that means we'll cop their little lot. I tell you, mate, this is the end of the world, tonight."

"Oh, go on! You know they'll back down." A pale girl wet her lips.

"Not them, they won't. We'll be at the centre of the bomb—and no-one knows what happens there."

The pale girl's eyes widened, and Mr. Culpeper felt a breath of sympathy for her. She—and all these others—had something to live for, something to make them struggle against death. He glanced at his baby. Perhaps—just perhaps, this was what his baby had been born to accomplish. The thought twisted him; it was ghoulish. He couldn't carry it in his mind and sought to reject it; but stub-

bornly it clung to his brain cells with the impact of a traumatic experience.

Perhaps his baby was bringing the bomb!

Sweat oozed down Mr. Culpeper's face. He rose stiffly, moved across to the fussing First Aider and stared down at his baby. Sleep, deep and dreamless, held that puckered face slack and relaxed. The two strange marks were dull and almost invisible. Catching him by the throat in its unexpected impact, the sleeping baby's face brought a vivid image of his wife. She had been so wonderful...

Before Mr. Culpeper had time even to analyse the maudlin feeling, the red splotches on his baby's forehead brightened, grew crimson, shone with a reflected sheen from the lights overhead. He stared, horrified. The baby stretched, little lips smacking together, eyes crinkling as it worked its face around the business of waking up. The baby opened its mouth.

Mr. Culpeper *knew* that the end of the world was at hand.

It was worth having the disease
to get the——

CURE for DREAMERS

BY JULIAN CARY

GILL PUT DOWN HIS BOOK, lit a cigarette, and stared thoughtfully up at the ceiling through clouds of scented smoke.

"Finished?" Mary, his wife, was a broad-minded girl and tried hard not to find his reading objectionable.

"Almost." Gill picked up the book and looked at it. It was old and shabby and he handled it with loving care. "This is pretty good stuff. Spencer recommended it and it's all about the early wars. You know, men fighting each other with guns and things."

"Fighting!" Mary's expression revealed her disgust. "How horrible!"

"I wouldn't say that," said Gill thoughtfully. "In the early days men had to fight, women too sometimes, and

they didn't look at things the way we do." He rifled the pages. "Look, here is an illustration. The men in the red coats are fighting those in green. One of them is wounded; you can tell that by the bandage around his arm, and all around them are the spoils of war."

"What's that?" Mary didn't look at the five-colour illustration.

"Loot," said Gill vaguely. "Gold and silks and jewels. Uranium too, I think, and women."

"Women?"

"Yes. It seems that if you won a battle you always took the losers' women."

"What on earth for?" Mary sounded genuinely surprised. "What would they do with a bunch of women?"

"Marry them, I suppose. Or perhaps they wanted them to cook the food and mend the clothes."

"Why didn't they use electronic ovens?" asked Mary. She was trying hard to be patient, but sometimes Gill talked the most awful nonsense. "And why mend clothes? Couldn't they just get new ones from the dispenser?"

"I don't think that they could have had electronic ovens and clothes dispensers," said Gill uncertainly. "This was along time ago remember."

"It doesn't make any difference," said Mary positively. "We've had them ever since I can remember, and mother had them and her mother and . . ." She pursed her lips at Gill's expression. "Don't start another of your arguments, Gill."

"I'm not arguing," he said patiently. "All I'm saying is, that back in the old days, things were different to what they are now. That's all." He sighed as he put down the book. "You know, life must have been exciting in those days, not like it is now. Just think of it! Notification would come and off you'd go to join the army. They'd give

you a uniform and a gun and you'd go out and fight. If you won you helped yourself to whatever you wanted. If you lost then you had to pay ransom so the enemy would let you go." He sighed again. "I wish that I had lived in those times."

"I don't," said Mary. Leaning forward she switched on the T.V. and smiled at the simpering expression on the face of a wavy-haired crooner. "Oh good! It's Hebrin. I think that he's simply marvellous!"

"I think he stinks," said Gill. Mary looked shocked.

"Why Gill, how can you say a thing like that? All the girls simply rave over him." She sighed as she stared at the blown-up features. Gill switched off the set. "Gill!"

"I'm not having that character coming into my home and giving you silly ideas," he said firmly. "You'll be wanting me to have my face altered to look like his next."

"Oh Gill! Would you?" Mary looked ecstatic. "That would be wonderful. Fancy being married to Hebrin!"

"I thought so." Gill looked disgusted; he hadn't meant his suggestion to be taken

seriously. "Well, I'm not going to have my face altered just to please you."

"That's unfair!"

"No it isn't. In the old days a man was born with a face and he kept it until he died. Women too. There was none of this changing every few months just to keep in the fashion. Its . . ." He fumbled for the right word. "It's indecent!"

"Oh is it! And I suppose that you think it's all right to get old and wrinkled and ugly?" Mary was fuming with temper. "Well it isn't! It's you that's indecent, you and those old books of yours. The trouble with you, Gill, is that you're not satisfied with what you've got. You want to go off fighting and looting and collecting women and things!" She paused for breath. "You're just a dreamer! A useless, selfish dreamer! And I hate you! I . . ."

The row which started then was the worst they had ever had.

The psychologist was a small man with handsome features and hands to match. He probably hadn't been born with either, but with

plastic surgery the way it was, that meant nothing. He gestured for Gill to take a chair while he glanced at the card the young man had brought with him and compared it to another he took from a file.

"I see by your medical card that you were ordered to report here by your supervisor." He dropped the cards on his desk and looked at Gill. "Why didn't you report sick of your own accord?"

"I'm not sick."

"No?" The psychologist raised his eyebrows. "Well, perhaps not, but it is best to be sure." He smiled for the first time. "Just what appears to be the trouble?"

"Nothing much." Despite himself Gill felt friendly towards the other man. Considering the empathy index of the psychologist it would have been almost impossible for him to feel otherwise. "I've made a couple of mistakes at work, nothing serious, and I'm not sleeping as well as I used to. That's all."

"That's enough," said the psychologist firmly. He stared at the cards again. "You are married, no children, and live in a class three apartment. You work four hours a day at

a factory manufacturing plastic footwear. Your job is to load the crates of finished products onto waggons for distribution and delivery. Twice now you've misjudged and allowed the load to fall from the grab at the wrong time. Why?"

"I don't know." Gill wriggled uncomfortably on his chair.

"The work isn't hard," reminded the psychologist. "All you have to do is to sit on a chair and watch a screen. When a waggon needs loading you press a couple of buttons and load it."

"I know." Gill felt even more uncomfortable. "I guess that maybe I wasn't watching the screen as closely as I should. Or maybe the waggon moved a little without my noticing, or my finger slipped on the button."

"Hardly the explanation of a healthy man," commented the psychologist drily. "Your marriage, is it a happy one?"

"My wife left me three days ago."

"Divorce?"

"No, she just walked out and went to live with a friend." Gill flushed. "We had a quarrel."

"What about?"

"Hebrin, the television crooner. Mary, that's my wife, likes him a lot."

"So do ten million other women," reminded the psychologist. "That is why he is where he is. Were you jealous of him?"

"Not really," lied Gill. "You can't be jealous of an image."

"You'd be surprised." The small man made a note on one of the cards. "Were you and your wife compatible? No false modesty now, were you? Any frustrations?"

"Nooo," said Gill slowly. "I don't think so."

"No conscious ones anyway." The psychologist made another note. "How do you spend your leisure time?"

"I read a lot," said Gill, "and . . ."

"Read?"

"Yes."

"Books? Printed books?"

"That's right. I . . ."

"Those treble-cursed books," gritted the psychologist. He seemed really angry. "That accounts for it. Adventure stories, I suppose? War stories? Battle, murder and sudden death? All that sort of thing?"

"Yes." Gill stared at the small man with increased respect. "I'm a great student of the early wars. How did you know?"

"It's a familiar pattern. Every time I get a patient who doesn't seem able to concentrate on his work or his family, books are always to blame. I suppose that you feel you are wasting your time, that there are great things doing of which you have no part, and that you should have been born five hundred years ago. Am I right?"

"Was it as long ago as that?"

"The war period? Yes." The psychologist bit out the words as though he hated their taste. "You also suffer from a lack of physical exercise and a numbing of your critical faculty. You privately consider your wife to be a first class moron and you feel that our whole technocratical society is leading the race towards decadence and eventual extinction. Is that correct?"

"Well," said Gill slowly, "I hadn't exactly thought it out that far."

"You will. I told you that yours was a familiar pattern, familiar and predictable. You feel hemmed in and try to

escape through the medium of adventure stories. You are dissatisfied with your life and long for the glories of the past. You," the psychologist accused, "are a dreamer." He leaned back and smiled. "Fortunately the cure is simple."

"Cure!" Gill grabbed at the arms of his chair. "But I'm not sick!"

"That," said the small man patiently, "is a matter of opinion. Mentally you are not normal and that makes you a sick man. Look at it this way. How many people do you personally know who waste their time reading books?" He smiled at Gill's silence. "None! Or at the most one other unfortunate who hasn't been reported in yet. No one reads books now, not while they have the television and comic strips, the picture pages and the recorders. Books are a thing of the past when people needed some form of vicarious escape from the horror of their daily life. In that culture they were essential; in our society they are a confounded nuisance. More people obtain their abberations from books than from any other medium. One day we'll burn

the last one and be wholly sane again." He reached for Gill's card and made a third note. He smiled.

"There's no need for you to worry about a thing. I told you that the cure is a simple one and so it is. Now! You have an inclination to be a soldier?"

"Yes."

"Anything else? Don't hesitate to tell me if there is."

"I don't think so." Gill frowned, then shook his head. "No, nothing else."

"Good." The psychologist scribbled on the card and pressed a button. "Go through that door and give this card to the man in the other office. He will attend to you. Good-bye."

The next office was a small, bare cubicle of a room smelling faintly of antiseptics. A bored, smooth faced simulacrum of Hebrin took the card, looked at it, and yawned.

"All right, sport, roll up your sleeve and I'll inoculate you."

"Inoculate me?"

"Sure; you know what that is, don't you? We give it here, saves work at the other end, and saves you bother. You may pass out but don't let it

worry you." He picked up a hypodermic. "Arm please, soldier."

Soldier! Gill held out his arm.

It was horrible. It was like nothing he had ever dreamed of in his wildest imaginings. His uniform was a dirty grey, coarse and chafing his tender skin. His boots were machines designed to blister his feet and weighing a ton. His nails were broken, his bones ached from sleeping on bare, wet ground and the stench of the latrines he was cleaning churned his stomach.

True, he had a gun, a long-barrelled thing which had bruised his shoulder so painfully that he had become terrified of firing it for fear of the recoil. He had a bayonet too, a wicked-looking needle of steel, and a tin hat, and a field kit, and enough webbing to harness a horse.

He also had a sergeant who had obviously come straight from hell.

It was peculiar about the sergeant. His face seemed vaguely familiar but his orders, when sorted out from the accompanying insults, made no logical sense at all. Why should latrine buckets,

considering their use, have to be scoured until they resembled mirrors? What purpose was there in polishing the studs of his boots? Why should his webbing have to be carefully smeared with some paste to clean it when it immediately became dirty again? Why should he have to first polish the brass buttons of his uniform and then, after inspection, dull them again so that they wouldn't reflect light and so betray his position to the enemy? And the enemy?

So far Gill hadn't seen or heard of them aside from some frenzied yelling in the far distance.

Often Gill thought of his warm apartment, snug and comfortable with its built-in television, his wife, their bedroom, his easy job at the factory. Comparing it with the hard ground, the sour food, the ceaseless work and the general filth and discomfort almost brought tears to his eyes. He had never, but never, imagined a soldier's life to be like this.

Still, he supposed, war was like that between battles. Once they had a battle everything would be all right. A sharp encounter, the defeat of the enemy, and he would be

able to help himself to the loot and the women.

Idly he scratched himself—he was always scratching lately—and put down the newly cleaned bucket.

He looked up to see a face grinning down at him.

The face belonged to a body dressed in dull green, the uniform of the enemy, and the hands held a bayoneted rifle. Even as Gill opened his mouth to yell a warning the man jumped towards him, the rifle swinging in a practiced arc as the bayonet lunged forward in a vicious thrust.

The pain was something Gill had never thought possible. It tore into him, sickening, almost obscene in its sheer agony. With the pain came terror, the realisation that he was impaled on an enemy bayonet and was dying. He tried to scream and a boot crashed against his mouth. He tried to struggle but he had no strength. Hands were all over him and a voice hissed close to his ear: "Finish him! Quick!"

From the corner of his eye Gill saw the glint of a knife as it came towards his throat. He felt the prick of something sharp against his

skin and had time for one last moment of intense regret before everything went dark.

"Did you enjoy it?" The voice came from the psychologist and Gill, after one unbelieving stare, sagged with relief.

"So it was all a dream."

"No," corrected the small man. "No dream." He gestured towards the instruments around him. "What you saw, felt, experienced was, as far as you were concerned, the literal truth. External stimuli were given you while you were in a hypnotic trance. Suggestion and association of ideas did the rest so that you actually lived in your dream world." He smiled at Gill's expression. "You wanted to be a soldier," he explained. "You had reached the stage where you couldn't be satisfied with the present and wanted to escape to a fictitious past of adventure and glory. Naturally, as you only knew of the past from works of fiction, you couldn't realise what real army life was like. You do now."

"The dirt? The pain and brutality and stupidity?" Gill shuddered. "Is that what it was like?"

"Yes, there is no romance in war. We showed you the real thing. Incidentally, I took the part of the sergeant. Did you recognise me?"

"I had the impression that I'd seen you before," admitted Gill. He frowned. "Wait a minute! I was in the army for over six months. How could you have been the sergeant?"

"Quite simple," said the small man. "We merely speeded up your time-sense. You spent about six months in the army, subjective time that is, but the real time was a little over two hours. Most of the stimuli are recorded, the shouts and orders and training. The kick in the mouth was a hand touching your lips, the bayonet a pressure against the stomach, the knife was of course, the waking hypodermic."

"Six months!"

"Subjective time. Fortunately your case was a mild one and soon cured. Others have to be treated for years, subjective time, naturally, but the cure works every time. You see, Gill, it is based on a very elementary principle; give a man enough of what he thinks he wants and he will no longer want it. Especially

when what he thinks he wants isn't what he wants at all. Like you and the army. The kind of life you longed for has never existed and so, now that you realise that, you will no longer want it." He looked sharply at Gill. "Why are you smiling?"

"Am I?" Gill composed his features. "Tell me, do you treat all your patients in the same way?"

"All those with fiction-induced abberations, yes. Some hobby-abberations can be cured in the same way also. We had a stamp collector here last week. He had a mania for gathering little pieces of valueless paper—he couldn't think of anything else, so we gave him the illusion that he was surrounded by them. All he had to do for years, subjective time, was to sort and arrange stamps. Now he can't look one in the face." The psychologist frowned. "You *are* smiling!"

"No I'm not," said Gill and turned the smile into a frown. "May I go now?"

"Of course. Your wife has been notified of your illness and cure and will be waiting for you." The small man glared at Gill. "There it is again! That smile! Why are you so amused?"

"I just feel good," said Gill honestly. His smile broadened. "And I was thinking about something."

"Something important?"

"I think so." Gill shook the small man by the hand, thanked the assistants and left the hospital. He was grinning all over his face as he walked down the street, not towards home, but towards the bookshop.

He was thinking of book-induced abberations and the method used to cure them and he was thinking of Spencer, the book dealer, and his small but select stock of rare and exotic works. The unexpurgated versions, naturally.

His grin became even wider as he thought about it.

It was going to be a great life for dreamers.

The way to the Planets

by A. E. ROY, B.Sc., Ph.D., F.S.A.S., F.B.I.S.

11—The Development of the Lunar Base

IN THE YEARS IMMEDIATELY after the first spaceship lands on the Moon, the lunar base, a collection of underground living quarters, stores, laboratories and workshops will be developed to hasten on the future programme of spaceflight, to act as a refuelling base for spaceships. To that end expeditions from it will prospect the surface crust of the satellite with two well-defined objectives, to make the base as self-supporting as possible and to discover workable sources of propellants and other substances. Among those substances eagerly sought for will be water, oxygen, hydrogen and nitrogen.

But we have seen that on the Moon there is no free water and no atmosphere. Is there any hope, therefore, of the lunar explorers achieving

their objectives? To answer that question we must consider what we know of the Moon's composition and history.

It has been suggested by some astronomers that the Moon was once a part of the Earth, being shot off the parent body in the remote past like a piece of mud hurled off a rotating wheel. The effects of tidal friction have caused it to recede gradually to its present distance. The fact that the mean density of the Moon's material—obtained by dividing its mass by its volume—is almost equal to the mean density of the surface rocks of the Earth is some evidence in favour of this theory. In addition, if the material of the Moon was formed, like the Earth's, by condensation from gas, we would expect

its original crust to have formed in the same way as that of the Earth. Its subsequent history, however, would be different and it is unlikely that either sedimentary rocks (those laid down by the weathering of the original crust) or metamorphic rocks (those formed by the action of intense heat and pressure on the original or sedimentary rocks) would be found to any great extent. Thus most of the Moon's crust may be formed of igneous rocks so that their composition as they are found on Earth must be discussed.

G. V. E. Thompson, of the British Interplanetary Society, has reminded us in this connection that the igneous rocks, having crystallised from the parent magma, do not possess a uniform composition, since segregation takes place. He points out that the final crystallisation gives us enrichments of great economic importance, the products being formed in pegmatic veins. These would include minerals rich in water of crystallisation, compounds of tin, etc., and it is to be noted

that these pegmatites are often the main sources of some of the lighter elements on the Earth. Thompson concludes that on the Moon there may be found workable deposits of some of the elements in which future space-travellers will be interested.

In estimating the probability of the presence of water, various factors must be considered. It is likely that any surface water that once existed would have long ago been evaporated and lost to space by the escape of the individual molecules as they attained the Moon's velocity of escape—only 5,200 miles per hour as against Earth's 25,000 miles per hour. But in a permanently shaded spot on the Moon, the temperature may never rise sufficiently high to cause this to happen, so that any ice deposits left may be found in caves, crevasses and underground caverns.

In addition, water would be present in the sub-surface rocks. G. V. E. Thompson estimates that they may contain as much as 5 per cent. His estimate is based on the facts that water is soluble in

the molten magma, under the pressures that existed there, and that when final solidification takes place, the water stays in the rock, particularly in the pegmatites.

In order to free this water the minerals would be mined and heated. During the lunar day, this heating could be accomplished by focusing the Sun's rays by systems of concave mirrors. G. Awdry has suggested that an old-fashioned tube-mill, in which the larger lumps of ore do the actual grinding, could be built to pulverise the material to be treated.

From this water, supplies of oxygen and hydrogen can then be obtained by electrolysis the water to which some sulphuric acid has been added. Solar power engines might provide the electricity for this, though it is a safe prophecy to make that by the time the lunar base has been in existence for a few years, atomic piles will be available capable of supplying the required electricity.

A more direct way of obtaining oxygen is suggested by the fact that oxygen com-

prises more than half, by weight, of the crust of the Earth, so that the surface rocks of the Moon will probably contain an appreciable amount. Awdry has calculated that in the reduction of 2.625 tonnes of iron, or of 1.125 tonnes of aluminium, a tonne of oxygen could be extracted. This is equivalent to 1,000 man-days supply, even if none of the atmosphere is recovered by repurification processes.

The situation with regard to nitrogen is less promising. Nitrogen would be useful when combined chemically with hydrogen to give ammonia (NH_3) or hydrazine (N_2H_4) as well as using it as an element. The spectroscope tells us that the atmospheres of Jupiter, Saturn, Uranus and Neptune contain large quantities of ammonia, in addition to methane (CH_4). It has been suggested, for example, that the clouds on Jupiter may consist mainly of condensed drops or crystals of ammonia, though why they show such strong colours is still unknown. We know, too, that nitrogen makes up

four fifths of the air we breathe. However, nitrogen on the Earth is much less abundant than either oxygen or carbon and also less active in combining with other elements. Thus it is likely that in the past the Moon's nitrogen would have tended to remain as an element and been lost to space with the rest of the Moon's atmosphere. It may be then that supplies of nitrogen will require to be shipped to the Moon, if the atmosphere in the underground lunar base is to consist of one fifth oxygen and four fifths nitrogen. The supply, however, will only require "topping up" at infrequent intervals, since nitrogen's only use in our atmosphere seems to be as a dilutant.

Finally, there remains the problem of food. Any attempt to estimate the possibility of finding a lunar soil capable of growing crops in pressurised underground "farms" is pure speculation. What is more certain is that attempts will be made to grow foodstuffs by hydroponics. As every science-fictioneer knows,

hydroponics is the science whereby plants are grown on netting over tanks of nutrient fluids. The plants are supplied with sunlight, and, judging by the progress made in this science in the past ten years, it should be possible to keep the lunar base supplied in this way. It is to be noted, too, that these plants would help to purify the air in the base, removing carbon dioxide and supplying oxygen.

A further source of foodstuffs, particularly of protein and fats, is by using tanks of algæ to convert human waste products into edible substances. One important advantage of such a scheme would be that carbon dioxide would be removed from the atmosphere and replaced by oxygen by the algæ. A considerable study has been made already in large-scale algæ culture by the Universities of Stanford, Texas, California and Maryland. One of their main interests is the conversion of sewage from cities into food for livestock. The large-scale culture of algæ may play an important part in the future of mankind by helping

to make the world's food supply adequate for the world's population.

Basically, an algæ "farm" would consist of the following components: an algæ tank into which air, plus carbon dioxide, plus human waste products are fed; a circulating pump which passes the suspension through a trough covered with a light filter so that the proper intensity and wavelengths of light can be delivered to the algæ; and a centrifuge which separates the algæ from the water for use as food.

Dr. N. J. Bowman, writing in the *Journal of the B.I.S.* three years ago, considered very carefully the possibilities of algæ for food and atmosphere control in spaceships on the basis of knowledge now available. He arrived at a figure of 250 kilograms (about 5 cwt.) of algæ suspension, including necessary equipment to provide one man with a completely closed cycle for food and atmospheric purification. He then compared this figure with a figure of 1.7 kilogram per man per day of food and oxygen,

tanks, refrigeration and compressor units, etc., calculated on the basis of liquid oxygen and dehydrated food being carried instead of an algæ plant.

It is seen that if the journey lasts less than five months, then, if weight is the criterion, the algæ plant is less advantageous. For example, in the lunar voyage lasting a few days, it would be better to use dehydrated food and liquid oxygen. But for voyages to the planets, lasting many months, or for a space station, or for a lunar base, the algæ farm has definite advantages. One of these is that the time of usefulness of the plant is indefinitely long, another is the "freshness" imparted to the air by the algæ plant, in contrast to the unpleasant sensations in breathing experienced in the prolonged use of "canned" air or chemical purification. And, finally, Dr. Bowman points out that biologists are agreed that greater rates of algæ growth will be possible in the future, thus increasing the efficiency of the plant.

Thus it is seen that there are

definite grounds for believing that the lunar base, after some years of existence, may become largely self-supporting, supplying itself with air, food, water, building materials and energy. Almost certainly, as time goes on, more than one base will be developed and the problem of communication between them and interchange of personnel will have to be solved. For communication, a string of radio-repeater stations may be built, and for the interchange of personnel either railways, or pressurised vehicles, equipped with broad caterpillar tracks, may be used. The use of rocket-ships is unlikely as this method would be wasteful of fuel. If railways are ultimately built, and there are bends in them—perhaps to avoid a large crater—then bankings will require to be six times as steep as is necessary on Earth if the train is to remain on the rails!

Having become self-supporting, the lunar colony's next task is to export materials, food, air and fuels to the circum-Earth orbit where they will be used to equip inter-

planetary spaceships. It has been pointed out that it requires less work to raise a mass from the Moon's surface to the circum-Earth orbit than it takes to raise that mass from the Earth into that orbit. There are several ways this might be done from the Moon. The most obvious way is to use ferry rockets whose pilots will take off from the Moon's surface, cross space to the orbit about the Earth, eject the cargo, then break-out of the orbit and return to the Moon. This method, however, has several disadvantages. For example, pilots have to be used so that food, air and water for them has to be provided. The fuel-load is, therefore, large. An improvement on this method is to use unmanned radio-controlled supply rockets. These rockets rise from the Moon's surface and are guided across to the vicinity of the Earth. There, the space station radio may be used to steer them into the prescribed circum-Earth orbit, or a ferry-rocket, permanently based near the space station, is sent to tow the supply rocket into

the orbit. In this way, by avoiding the use of a living compartment and its crew, the ratio of pay-load to take-off mass is made much larger.

A third method is based, in a sense, on Jules Verne's famous book "From the Earth to the Moon." In it a gigantic cannon sunk in the earth was used to hurl a cannon-ball containing the three adventurers across space to our satellite. The method suffered from two serious defects: the initial acceleration would have killed the occupants, and the Earth's atmosphere would have destroyed the projectile. But on the Moon there is no atmosphere, and in addition the velocity of escape from our satellite is 5,200 miles per hour as against Earth's 25,000 miles per hour. Thus, while a gun is not suggested to fire cargo containers from the Moon's surface, Arthur Clarke has described an electromagnetic launcher that, if built on the Moon, could accelerate containers up to

escape velocity over a gently-rising track two miles long. This method has the advantages that no fuel need be raised through the Moon's gravitational field by burning other quantities of fuel, and that the electric energy of launching can be accumulated by a static installation, perhaps driven by an atomic pile which could have any weight.

The containers would be collected at some part of their orbit in the way described previously, perhaps by the ferry rocket attached to the space station. If a supply system such as this could be set up some years after the first landing on the Moon, then the way to Mars and Venus would be opened up long before it might be if Earth had no satellite. So next time you look at the Moon, think of it as a great mass of valuable materials set high up the sides of the gravitational well we live in and must climb out of if space travel is to take place.

Even a simple thing can be an—

Act of Courage

by SYDNEY J. BOUNDS

I WAS JUST BACK FROM A trip to the mountains of eternal light and the stark simplicity of Lunar City appeared almost voluptuous. There were few people present in the main reception hall, and so it was that my attention focused on Alison Pascall. Recognition was instantaneous, for I had often seen news pictures of her.

"Mr. Salmon," she said in a forthright manner, "I am Alison Pascall and I have a proposition to put to you. Perhaps you will join us for dinner?" She laid a perfectly manicured hand on the arm of the man beside her. "My husband, Vivian."

I glanced briefly at Vivian Pascall and saw a young man of handsome cast; if he had not been married to Earth's wealthiest woman I doubt if I should have noticed him at all.

"Give me time to clean up," I answered. "Will twenty-thirty hours suit you?"

"Perfectly, Mr. Salmon—we shall be expecting you."

I excused myself and took the lift below ground, to my personal quarters in the rock cells under the dome. I soaked in a bath of hot water and felt the tension leave me—but my mind remained active, exploring the possibilities opened up by the arrival of Alison Pascall.

I realised that I did not know much about her. Her father had died some years back, leaving her his entire fortune. She had married almost immediately . . . Loneliness, I wondered? I'd heard it said that the wealthy are the loneliest people in the world, and it could be true. I began to calculate how much I could get out of her, for my life's work—explora-

tion of the Moon—was an expensive business, and finding the necessary money had never been easy.

The dinner was excellent, the conversation desultory until Alison Pascall said:

"My husband wants to climb a mountain." Her tone of voice was that of a parent humouring a wayward child.

I looked more closely at Vivian Pascall and detected a determined thrust to his jaw, a hint of fire behind his pale blue eyes. I began to revise my opinion of him.

"Any particular mountain?" I asked.

"Mount Pico," he said.

I thought about that, conscious that Alison's perfume was subtly insisting on my attention. No one had yet reached the top of Pico, but then, no one had made a serious attempt to do so. That part of the Moon had not been explored in any detail—and interested me on that account.

"Have you done much climbing?" I asked him.

"Not much—nothing big."

"It'll be a hard climb."

"I know," he said.

Alison's voice broke the silence which fell between us. "We want you to act as guide and take charge of the climb—you're the most experienced man for the job. The name of Bill Salmon is well-known on Earth—the books written about your explorations are famous."

"*We?*" I said.

Pascall's answer was bitter. "Alison insists on coming."

"It's no trip for a woman. Despite the fact of one-sixth gravity, climbing in a space-suit is a tough proposition. Pico is around nine thousand feet—and a fall from that height can be as fatal on the Moon as it would be on Earth."

Alison smiled.

"You won't need to make allowances because I'm a woman. I'm the hardy perennial type—you'll see!"

Looking at the delicate oval of her face, the smooth expanse of white shoulder, I doubted it.

"I'm prepared to donate a substantial sum towards your next expedition," she murmured.

I'll admit I was intrigued

by her; and badly wanted to look at the area around Pico—so I made a snap decision.

"All right," I said, "I'll take you to Pico!"

Next day we started getting our equipment together, and I had my first hint of the trouble to come. Alison had bought a whole lot of useless luxury items which she wanted to take with her, and Pascall and I were busy cutting out the non-essentials. We had just about finished sorting the stuff into two piles when Alison came in.

"I've got an eight-wheeled truck complete with shower and electric cooker," she boasted. "And a couple of men willing to act as porters—this is going to be a real safari, after all!"

Pascall swore at her. "Damn you, Alison," he said explosively, "you'll make a laughing stock of us. This is supposed to be a serious climb—we're travelling light, a fast trek out, the climb, and a speedy return. We're not a touring circus!"

"But Viv," she protested.

"I was only trying to make things easy for you——"

"That's all," Pascall said bitterly. "That's all you ever do—make things easy for me."

"I don't understand. Surely, you don't *want* to rough it?"

"You never have understood me, Alison."

She hesitated miserably, then: "If it's a question of money, Viv, I don't mind how much the trip costs, so long as you're happy."

"Money!" I could almost see the hairs bristling on Pascall's neck. "That's all you understand, Alison. Money is the answer to everything. I want something—you buy it. I'm getting fed up . . ." He glowered at me. "Might as well pack all the stuff, Salmon. She's paying."

With that, Vivian Pascall stalked from the room and I was alone with Alison. I couldn't face her, not with that hurt look in her eyes; and, to tell the truth, I was angry with Pascall. I thought he had been unnecessarily rude to his wife.

"It really isn't practicable

to carry more than essential equipment," I said quietly. "It's a question of weight and the main problem is oxygen—we have to carry our own cylinders. If we hire more men, that means more cylinders. It cancels out, you see. The truck was a good idea, but your husband has his mind set on travelling light—and a small electric sled is a good deal faster over the sort of terrain we're likely to meet."

She took it calmly.

"I understand now, but I wish it had been Vivian who explained it to me."

I spent a little time going over the equipment with her. I showed her the oxygen tents we would sleep in, the spacesuits with their fish-bowl helmets—and how to fix a sealing patch in an emergency. She was intelligent and learnt quickly.

She sorted through my coils of nylon rope and climbing tackle and picked up the powerful electric rifle I had included.

"Why?" she asked. "Why this? There aren't any wild beasts on the Moon."

"But there are some pretty wild men," I told her. "Diamond hunters. They operate outside the law and they don't like interference. I don't suppose we'll run into any of them, but, just in case . . ."

"Diamonds?"

"I thought everyone knew. There's a lot of crystallisation on the Moon, sometimes diamonds."

"I see."

She smiled then, thanked me for explaining to her, and left. I went back to checking our food and clothing and tried to forget about the scene I had just witnessed.

We started out at dawn the following day, Earth time. On the moon, with a "day" period equivalent to two of Earth's weeks, the measurement of time is a purely arbitrary affair and the old phrases linger on. We had ten days of sunlight in which to reach Pico and return.

Neither Alison nor Vivian Pascall had been outside the dome since their arrival on the Moon, and so my first job was to instruct them in the art of

manœuvring under a lesser gravity. Colonists call that peculiar bounding leap the "kangaroo hop," and both my charges became proficient at it before Lunar City dropped out of sight.

I stopped once to check my landmarks; behind us, the dome of the observatory; to the south, the Apennine range; northwards, the Caucasus. I set my course across the Sea of Rains, a smoothly curving bowl of dust which covered the solidified lava underneath. The glare of reflected sunlight would have dazzled us but for our built-in eye shields—and these, unfortunately, had the effect of reducing colour values. The Moonscape is not really a monochrome, but that's how it appears when looked at from a spacesuit. Above us, the Earth hung like a great, bloated moon.

We had short-range radio for communication, but none of us felt like talking to begin with. The Pascalls were absorbed in keeping their balance and I in handling the sled with all our equipment. It wasn't until the observatory

disappeared from view and we were quite alone that any desire to talk manifested itself.

"It's frightening," Alison said, "so strange and silent—likesomethingin a nightmare."

"It can be very beautiful," I told her. "I'd like you to see it by earthlight—you don't need an eye shield then, and the colours are wonderful."

"I don't think I could ever like the Moon."

She was keeping up well and I began to hope for a fast, uneventful trip. There were little incidents though, to point the trend of future events . . . like the time we crossed our first crevasse.

It was not very wide, but long, and we'd have lost a lot of time by going round. Looking into it, the solid blackness gave the impression of a bottomless pit. Alison stood on the brink, hesitating over the jump. Pascall helped me across with the sled; then I heard her call—she was still on the far side, standing with one arm outstretched in a pathetic attitude.

"Vivian, help me!"

He ignored her completely, taking over the sled from me

and pushing on. I went back for her and we crossed together. Her face was pale under the helmet, her lips tight-drawn.

"Thanks, Bill," she said quietly.

There were other things of that sort. I remember one. We had just made our first stop and were pitching the tents. Around us, the dust bowl curved away to a horizon of jagged cliffs, their peaks thrusting into an airless sky. One small crater was close by, casting a long black shadow across the luminous wonder of the plain.

Pascall kept stopping and looking about him and, finally, he said: "It's tremendous! I never dreamt anything like this existed. I feel like a man waking to a new world, a world of beauty unsoiled by human hands . . ."

Alison broke in. "I've a headache—I'm going to lie down."

I thought Pascall might have shown his wife some consideration; after all, several hours in a spacesuit are liable to give anyone a headache.

But he ignored her again, and Alison retired to her tent in silence.

Vivian Pascall gazed at the distant peaks with bright, intense eyes. There was excitement in him—an excitement I shared. The moon is like that, if you have the right temperament.

Abruptly, irritated by his manner, I said: "I'm turning in, now—and I'd advise you to do the same."

He looked at me, smiling strangely.

"Don't let Alison fool you, Bill. She didn't want to make this trip—all she wants is for me to go back. She's putting on an act. She's no more of a headache than I have!"

I didn't answer him. My sympathies were entirely with Alison. I imagined her alone in her tent, suffering, while . . . I think I was a little in love with her just then.

After six hours, we moved on again.

Aristillus lay behind us and we were headed straight for the high wall of the Alps. My intention was to reach a

small colony near Plato and rest before attempting Pico. It was the longest lap of our journey and Pascall and I took turns with the sled; even so, Alison lagged behind.

"I'm sorry, Bill," she said presently, "but I've got to rest. I'm dead tired."

"All right," I agreed. "We'll break for half an hour."

She sat down on a rocky mound and I joined her. Pascall, however, took the sled and went on alone.

"We're resting," I said sharply. "That means you, too."

"I'm going on," came his answer. "Catch up with me when you've rested." I heard a metallic click.

"Pascall——"

"It's useless talking to him," Alison said. "He's switched off his radio. A spacesuit must seem like heaven to a man who doesn't want to hear the sound of his wife's voice!"

"The damn fool! If he has an accident——"

Alison rose wearily. "All right, let's go on."

"No," I said, and pushed her back. "You need a rest,

and we can follow his tracks easy enough. Let him wait for us."

She didn't say anything for a while, and I thought she was dozing off. Then, quite suddenly, she said: "Why did you never marry, Bill? I can imagine it being very nice, being married to you. You're rugged—you give me a warm, comfortable feeling inside."

What kind of an answer is a man supposed to give to a question like that? I said: "Guess I've been too long on my own to suit any woman."

"I could love you, Bill."

I looked at her and found something in her eyes that unsettled me. "You already have a husband," I pointed out.

She laughed—a short, staccato laugh.

"Viv is no good. He's a fool—and a coward. Bill, maybe he won't come back from this trip . . ."

I didn't like the turn our conversation was taking.

"We'll see that he comes back," I said gruffly.

Alison sighed. "Of course—we'll see he comes back. He's all I've got."

I was glad when we moved on.

When we finally caught up with Pascall, I gave him a lecture on the foolhardiness of switching off his radio and going on alone. He had the grace to apologise, but his manner was reserved. He was changing all the time, I realised, and, with Pico on the horizon, showed even more determination.

"Think we could make it to the top?" he asked.

"Perhaps. Depends on the conditions we find on the lower slopes. Anyway, I'm making the decision about how far up we go."

"Whatever you say, Bill," he agreed.

Alison didn't seem to know what to make of her husband. She was seeing him in a new light. I suppose she thought he'd get tired of the hardships and change his mind about the climb; instead, he became keener with every step we took.

"I vote we turn round and go right back to Lunar City," she said. "There's no sense to this at all. Bill, why does anyone climb a mountain?"

I couldn't tell her, not in words. It's a feeling that comes over some people—either you have it or you don't. I just shook my head.

"Viv," she appealed. "I'm tired of this. I want to go back."

"Then I'll climb Pico alone," he answered.

And that was that—until we reached the colony near Plato.

The dome was a small one, staffed by two meteorologists, and the quarters cramped and lacking in privacy. I suppose that was why I didn't anticipate the embarrassment of a domestic squabble. It was after I had checked our stores and was passing the Pascalls' room, that I heard the sound of raised voices. Alison was crying.

"For God's sake stop that snivelling," Vivian Pascall said. "I didn't want you on this trip. I wanted to be alone, but you couldn't bear to let me out of your sight."

His tone was hard, with a cutting edge, and he didn't care how much he hurt her.

"It's your own fault, Alison—you and your money! You

can save those tears—I don't believe in them. And wipe that reproachful look off your face. Stop acting the martyr!"

"But Viv, I only wanted to help. I love you. I want to make——"

"I know!" He cut her short, his voice surging with resentment. "You want to make things easy for me. Damn it, Alison, a man has to fight his own battles. You've destroyed my self respect and turned me into a parasite. I depend on you for everything. I'm smothered with love and money and I'm not allowed to do anything for myself. I'm fed up with it!"

"Viv, you're all I've got——"

"Yes, and you try to keep me in a cage. I feel stifled. I've got to get out, do something on my own. That's why I'm going up Pico."

"You're mad," she said. "Mad! You'll be killed and——"

"And that will solve everything!"

I decided I'd heard enough and turned away. It wasn't my affair, but I was beginning to

understand Vivian Pascall. A man must learn to live alone. Pascall had to find himself and Alison was holding him back . . .

The senior met man had disturbing news.

"That MacGregor is around here somewhere," he told me. "He's got three other men with him and they look a dangerous crew. Better keep a sharp look-out—keep clear of them."

MacGregor was a diamond hunter, a man with no scruples, and I didn't feel happy to learn that he was in the vicinity. I had to tell the Pascalls, of course.

Alison said, triumphantly: "Now we'll *have* to go back. It would be stupid not to."

I looked at Pascall and knew what he was going to say by the set of his jaw.

"You can stay here, Alison. I'm finishing what I set out to do. How about you, Bill?"

I couldn't let him climb alone, and told him so. Alison got angry then.

"Very well," she said. "We'll all go—I'm not being left behind. And if anything happens, it'll be your fault!"

We set out on the last stage of our journey in an unhappy frame of mind. Pico lay to the south-east and we made good time over the smooth and shallow bowl of rock dust. I looked for tracks and saw none, forgot MacGregor and concentrated on the climb.

It was not going to be easy, despite a one-sixth gravity. The lower slopes were steep till they reached a plateau about three thousand feet up; then came a vertical face, and after that a steep climb to the peak. We moved round the irregular base of Pico till I selected the place I wanted.

"Pascall," I said bluntly, "we're going no higher than the plateau. Is that understood?"

He nodded.

We exchanged our oxygen cylinders for full ones and I measured out the rope and secured it to each of my charges in turn.

"I'll lead," I said. "Alison in second place—you, Pascall, will come last."

We began the ascent. At first, there were few difficulties

except those due to uncertain vision caused by double shadows. I marked each foot and hand-hold and we rested every twenty minutes.

Alison stuck it well and the only sound over the radio was that of a measured breathing. Once, the brilliant jet of a spaceship flared in the black void above us; watching it gave me a sense of complete isolation.

Just before the plateau, the rock face bulged outwards and I had some bad moments scrambling up and out, with the luminous disc of Earth hanging suspended above my face. I was sweating as I clambered over the ledge and made fast my end of the rope. I gave them what assistance I could from my vantage point and, eventually, we all three stood breathless on the plateau.

Pascall's face was radiant. Not even Alison's presence could spoil his sense of achievement. And the view was magnificent. We could see right across Plato, to that maze of hills and craters known as the Sea of Cold; in the other direction lay the

majestic Bay of Rainbows, flanked at either end by promontories Laplace and Heraclides—with a hundred mile sweep of brilliantly white rock dust between them.

We were all a little awed by that sight, and might have stood gazing in silent wonder for an unconscionable time had not the unexpected happened. Sound does not travel through a vacuum, and so the first indication I had that we were being attacked was the flash of an electric rifle followed by a fall of rock behind me!

I cursed myself for leaving my own gun on the sled below and shouted at the Pascalls to run. We bounded over the plateau, seeking the shelter of some rocks. MacGregor and his men came into the open, two of them hauling a small sled—the glitter of its cargo told me we had stumbled upon the diamond hunters immediately after they had struck a lode.

The situation was dangerous in the extreme. MacGregor wouldn't want to leave witnesses around—and

he was between us and our sled with its vital oxygen cylinders.

Another shot came. I led the Pascalls further back, almost to the base of the vertical wall that rose sheerly above us. I followed the wall until I found a crack wide enough to pass through.

"We'll have to chance where this leads," I said. "Keep close behind me."

We moved through inky black shadows and discovered the brink of a wide crevasse. A quick glance back informed me that MacGregor and his men were following hard upon us. There was nothing for it but to jump.

"Now don't panic," I said, "and don't look down. Fix your eyes on that crag of rock opposite and jump high. You can do it . . ."

I turned and took Alison's hand.

"We'll jump together. Ready? Now!"

The temptation to look down was almost too much to resist. I imagined the long fall if we missed that far ledge . . . out of the corner of

my eye I had a glimpse of Pascall's boots as he sailed past. Then I was bracing myself for the landing.

The rock shelf sloped away towards the abyss and I made it by scant inches, threw myself forward and dragged Alison after me. Pascall staggered as he landed and fell awkwardly. A rifle flared brightly from the direction of the dark cleft and we scuttled for cover. I thought Pascall seemed to be having trouble with his leg.

"You all right?" I asked.

"Yes. What do we do now?"

I was too much engaged in watching MacGregor's party to take more than superficial notice of his answer.

"Depends on whether they try to follow us."

I picked up a jagged stone and hurled it across the ravine, just to let them know what to expect. A tear in a spacesuit can be a nasty thing—and no one enjoys having rocks hurled at him while making a jump like that. I hoped to put them off making the attempt.

MacGregor's men seemed

in no hurry to risk the jump, so I threw another rock. They retreated, and that was the last we saw of them.

Alison began to whine. She was badly frightened.

"It's your fault, Vivian. I told you we shouldn't have come . . . now we'll all be killed!"

Pascall looked angry. He took hold of her and shook her, the way a dog shakes a rat.

"Shut up," he said furiously, and called her a name no husband should use to his wife. "Shut up, you——! You'll be all right. Bill will get you out of this. Now, shut up!"

I was listening to the sound of oxygen as it hissed steadily through my valve. It wasn't going to last for ever and we couldn't get back to the sled.

"Keep calm," I said. "We'll have to find another way down and make for the colony near Plato. And we'll need to hurry."

Satisfied, now, that MacGregor was not going to pursue us, I moved on. I found a way down that looked

possible and roped the Pascalls again.

Even for an experienced climber, that descent had difficulties—and the Pascalls were novices, depending entirely upon me for guidance. I had to mark every foothold and we weren't moving fast enough.

"Faster," I urged, "we've got to move faster!"

We seemed to be descending into a bowl, with high walls all round us. That bothered me a little, but I was too intent on testing each step to do anything about it. We reached the bottom of that section, and stuck there . . . there just wasn't any way down.

"All right," I said. "We've got to climb again. There'll be a way down on the far side. There *must* be."

I stared up, the rope taut behind me. Somebody was dragging.

"Keep up," I shouted. "For God's sake, keep up!"

I heard Pascall talking to Alison. His voice was gentle and he seemed to be apologising for something. After

that, we got on quicker. I reached the top, and there, on the other side, was a clear way down to the bottom of Pico. I could even see the dome of the met. station.

I hauled Alison up quickly—but, after her, there was only a trailing end of rope. Vivian Pascall was no longer with us.

It was a bad moment. Silently, I picked up the loose end of rope and examined it. It was neither cut nor frayed, but the meaning of that didn't register with me immediately. I looked at Alison's dead-white face and watched her lips form unspoken words. I think she was praying.

I unroped her, made one end fast to a crag of rock and slid down at reckless speed. My mind was on our slowly diminishing oxygen supply. I found Pascall lying on the ground, one leg awkwardly stiff. He was in pain and barely conscious.

"What is it?" I asked.

His eyes opened.

"You came back . . . my ankle, twisted . . . when I

jumped the crevasse back there. Leave me, Bill—look after Alison."

I knew then what he had done; rather than hold us up, he had deliberately untied the rope and sacrificed himself.

"You ruddy hero," I said bitterly.

I felt his ankle through the bulky spacesuit. It was swollen and he obviously couldn't put any weight on it. Getting him to the met station was going to be tough . . .

I don't remember much about that journey, except that it had the quality of a nightmare. Looking back, I don't see how we managed it; an injured man, a woman, and not enough oxygen . . . Pascall wasn't the only hero that trip.

But we got back.

I remember sitting by Pascall's bed and seeing the helpless misery in Alison's face. He was sleeping.

"Why?" she said. "Why did you go back, Bill? Why did you?"

That made me angry.

"What kind of a woman are you? Don't you realise, yet, that he was willing to throw away his own life to save yours?"

"It's too late," she whispered. "Too late."

I looked hard at her, for she was beautiful and I loved her.

"Perhaps not," I said. "He proved himself, back there on Pico. He found he had unsuspected reserves of courage—and he needs you. Perhaps you, too, can find a similar courage, for that's what it will take to humble yourself before him, to admit you were wrong. Try it. Tell him what's in your heart. I don't think you'll find it too late."

She bowed her head and I left them together.

That's all there is to it; except that a few weeks later I found a letter waiting for me at Lunar City. She hadn't written much, just enough to let me know that their marriage was on the mend—but she enclosed a cheque for ten thousand pounds.

Some things must always be
done—

ACCORDING TO TRADITION

BY PHILIP STRATFORD

CAPTAIN CHAMBERS, AT the control desk, finished with the slide rule and allowed it to spring back into its recess. Without looking up, he said: "What made you volunteer, hero?" Then, quickly, before Lawson could reply: "And did you check oxygen consumption your watch? The figures don't tally. Either we're using a damn sight too much or we have a leak somewhere."

"Oxygen tanks!" snorted Lawson. "Talk about an infantile, primitive, crapulous set-up like this——"

"Did you?"

"Sure, Cap. I checked. Down around ten per cent., but that's nothing——"

Chambers pushed off from his command acceleration

couch, floated across the cramped control room and reset valves regulating oxygen flow through the regeneration plant outlet. Lawson watched him, one leg swinging idly over the edge of his couch.

Chambers' tanned, fine-boned face held no emotion. His small, athlete's body moved with practised assurance under free-fall conditions. A quality of precision quickened his smallest movement.

"So why did you volunteer?" he said.

"Volunteer! I put my name in months ago and forgot all about it. Interplanetary Space Service is a phony, anyway. A panicky crowd of old women hanging onto their jobs like rising civil service pensioners."

"But you volunteered!" Cap-

tain Chambers' voice was still even, unhurried. A note of inflexibility crept in as he said: "You volunteered for this flight, Lieutenant Lawson. And remember, this is the first flight to the Moon!"

"All right. All right! So this is the first trip to Luna Base——"

"To the Moon, Lawson."

"What's the difference? We're making history. We're performing a great deed against overwhelming hazards that will go down in history in gold letters. I know. I've heard it all. The pioneers of space travel. Phooey!"

Surprisingly, Chambers grinned. "The pioneers were the guys who built that specially constructed space station back there orbiting Earth. They provided the launching platform for us to put this moonship down on Luna."

Lawson's handsome, rugged face grimaced with disgust. He was in the middle of saying: "And what a ship! A collection of bottles and balls and scrap girders and rubber balloons——" when a section of the outer casing

split and they were frantically slapping plastic leak-patches over the rupture.

"See what I mean?" Lawson flicked sweat from his forehead. It flew in little globules to splat against the bulkhead. "I must have been nuts even to think of volunteering for a trip like this."

"We're going to take this ship to the Moon," Chambers said grimly.

Lawson pulled again at his orlon sweater. "Crazy damn clothes. And I need more oxygen——"

"Sorry. Supply is in danger. We'd better take a looksee for that leak. If there is one."

"Outside?"

"I'll go."

"Good. I don't trust those fancy spacesuits. I nearly throttled testing down on Earth."

Chambers struggled into his suit, Lawson helping, and, with a conscious effort to memorise the drill, checked and double checked, then signalled for the lock to be opened. He dropped down through the central hatch, waited for the lock to be exhausted of air, then opened

the outer door and edged out onto the hull of *Discovery II*.

The well-remembered, ugly, somehow appealing outline of the ship was about him. The bulbous control globe beneath his feet. Overhead the lattice of girders supporting fuel tanks and rocket venturis. Already they had jettisoned the tanks which had contained the fuel for take-off from the station. He crabbed round the globe, handling his lifeline a little self consciously.

"You okay, Cap?"

"All okay, Lawson. I'm checking the regeneration plant lines first. Then I'll have a look at the oxygen bottles and their lines."

"Don't fall off."

"Funny boy."

Although, come to think of it, that wasn't very funny. Not at all. Everything was so familiar that he had to make an effort to realise that this was man's first flight from his mother planet. This was the first halting step from Earth to the Moon, the fore-runner of the great stellar expansion that would follow. Training and indoctrination could only carry you so far;

after that, you were all on your own.

"Hey, Cap. How's it going?"

"All right. Regeneration plant's okay. If there's a leak in the supply line—hold it. Yes. I've found it." A pause. Then: "All right. I'm coming in. Check the lock."

Inside the control globe, Chambers removed his helmet where frost was rapidly appearing in alarmingly beautiful star patterns. "I can fix that easily."

"Well, this crate is so fouled up—I tested the radio when you were outside. I think that's on the blink."

"Oh, no!"

"Oh, yes. Anyway, radar's still working. We can find our way down."

"And that's the big thing. We've got to get this ship to the Moon. In one piece. The whole world is looking at us."

Chambers found the sealing compound and went outside again. Around him the stars made familiar constellations vivid and seeming to peer over his shoulder.

He sealed the leak. On his way back he took a detour to

check the radio antennæ. Silicone lubrication ensured smooth functioning in space; but there might just be something wrong. He couldn't find anything obviously awry and went back inside shaking his head.

The two spacemen took the radio apart and put it together again. It warmed up, they heard the splutter of static, and then it went dead.

"Oh, hell!" Lawson pushed back, caught the table edge and floated to his couch. "That does it. I don't know any more dodges to try on the thing. If it won't work, it won't."

"We can get down on the Moon. That's the big thing."

"A couple of heroes! Big, shining knights in armour! Can't even repair a radio." Lawson put his hands to his head in exaggerated despair.

Chambers smiled again. "I know why they picked me for this job," he said. "And I think they picked you because you'll never blow your top owing to always moaning, and you're a comedian into the bargain. A good combination."

"Is that right?" Lawson looked up suddenly. "And just why did they pick you?"

Chambers hesitated. His face held a look that fitted a man surveying the fruition of his grandest dream.

"I can guess," Lawson went on without waiting for Chambers to reply. "You're one of these space merchants. Dedicated. Born with a drive in your pants. This sort of thing is strong wine to you."

Chambers did not reply. He floated across to a port and hung, motionless, for a long while. *Discovery II* swept through the dark reaches between worlds, drawing ever nearer the shining, beckoning sphere of the Moon.

At the beginning of the third day out everything went wrong. They were hit by two small meteors, scraps of dust that vapourised on their outer shield. The energy generated was sufficient to strain the inner hull. They spent six solid hours patching and darning, trying to make the cabin airtight. Exhausted, Lawson turned in whilst Chambers stood the watch.

On the fourth day, with the Moon huge ahead, their air plant broke down completely. Checking, Chambers discovered that the oxygen bottles were fractured beyond repair.

"So we can't do it, Cap," Lawson said.

"We're going to do it!" Fanaticism shone in Chambers' eyes. "We're going to take this ship to the Moon!"

After they had given up hope of getting the air plant back into working order they noticed that the air seemed to grow more foul by the minute. That was illusion. But it did them no good to know that. They were gasping in quick shallow breaths before they had any right to be.

"Here," Chambers said thickly. "Chew a stick."

Lawson took the potash cartridge with the plastic tube and stuck it in his mouth. The potash removed the carbon dioxide in the air as he breathed—but that wouldn't work once the oxygen was exhausted.

"Give in!" Lawson urged.

"No." Chambers' voice, for all the lack of oxygen, was

sharp. "No. We're going to make this. I can bring her down on the Moon if you play your part. The jets will still work okay. We'll make it."

After they had spun the gyros and turned over and fired the jets on a brief checking blast, he wasn't so sure.

Of the battery of fifty-six jets, only forty were functioning.

"What in hell's name do they call the engineers who built this crate?" fumed Lawson. "I don't call 'em engineers. I know what I call 'em—and it ain't pretty!"

"Forty jets. We'll get down. Rough. But we'll get down." Chambers hoped he sounded as confident as he pretended. Weak though he was, he went outside again, with the Moon like a monstrous eye glaring at his puny body, and checked the jets. Malfunction of materials—nothing to be done about it. He hoped, with a savage, yet sullen, sort of resignation, that the culprits would be suitably dealt with.

With a careful precision, following flight instructions,

they positioned the ship over the area where they were to land. Using fuel to bludgeon the ship into a correct orbit, Chambers realised that he had missed out on a point.

"Jettison fuel tanks five and six," he said tightly. His mouth was grim, the unshaven face haggard.

"Do what——? Oh, I see." Lawson completed instructions and Chambers felt some returning flow of optimism.

"If anything could go wrong on this trip," he said resentfully, "it blasted well has. Air. Fuel. Radio. What else is there?"

"Don't mention it, Cap," Lawson said. He twisted a strained face towards Chambers. "You know what they say."

Chambers took a long drink from the dispenser and then began to chew methodically on compressed high-protein food. His eyes followed the radar, scanning the ground. He swallowed convulsively, leaned forward.

Below them the Moon's surface leaped up. They were falling freely, aimed towards

an area, sharply defined, where crater walls and dusty plains made a picture of the Moon's surface that had been familiar to a thousand generations of men.

Chambers fired a checking blast to hold the ship above the designated area. There'd be hell to pay if he missed that.

And now the Moon was impossibly near. Radar clicking off the altitude was a monotonous reminder. He lost visual sight. Now everything depended on the skill in his fingers, directed by the computing mind in his skull. He gave a last glance at the computer, knowing that the precalculated landing firing pattern was completely useless under the new conditions. Only forty jets. And that chunk of cybernetic wizardry was sitting there, all set for fifty-six. It made him sick.

The moment came. Firing buttons went down under firm pressure. Deceleration struck, pinning them in their couches, holding them rigid. Now all he could do was wait. It seemed an awfully long time; surely they were down——

The world came up and

treated them like a tennis ball. It batted them with the uncaring ferocity of inanimate nature. The ship struck, lurched, flaring fire from its jets, vapourising the dust and sending a fountain of glaring sparks shooting outwards. The ship lurched. The spreading pads of its feet slithered, clawed, scrabbled for a foothold.

Miraculously, the ship stayed upright. Tilted; but upright.

Chambers lifted his head weakly. He looked over at Lawson.

"Done it!" he croaked. Then, more strongly: "By God. *Done it!*"

"Come on," Lawson said. "Let's go and collect our medals."

Tiredly, they climbed into spacesuits. Chambers had reserved one oxygen bottle per suit and the fresh influx of air cheered and re-invigorated them. They went out the airlock jauntily.

Standing on the first rung of the ladder, the legs plumping into the eternal dust of the Moon beneath him, Chambers

was conscious of a pang, a thrill, a surge of emotion. This was the event, the turning event of the centuries. Man had conquered space.

Lawson's voice, static ridden, came from his ear-phones. "Hey! The flag!"

"Sorry. Of course." Chambers turned, took the duralumin flag from Lawson's outstretched hooks, and, holding it self consciously before him, began to descend the rungs.

Surrounding the ship like a fanged horizon, the crater lifted its walls, pink-tinged and dark, silver and grey. Below, everything was sharp black and white. It was the Moon, the Moon that had been dreamt of for thousands of years. And now, here he was, walking down the ladder from the first ship to stand proudly on the dust of the moon.

It was a great moment.

The men clustered below thought so, too.

Movie and television cameras were trained on *Discovery II*. Excited commentators, sweating in their unaccustomed spacesuits, were

going into ecstasies, telling their billions of listeners throughout the Solar Federation Commonwealth of this supreme achievement.

Slightly to one side was the reception committee. Chambers, stepping off the ladder and blinking a little in the brilliance of the movie lamps, saw General Cartwright and Admiral Chuinski. Trust them to get themselves elected onto the committee, he told himself sourly.

They hadn't had to push this crate through space from Earth to the Moon.

"Welcome, Captain Chambers," someone was saying. "Welcome, Lieutenant Lawson." Somewhere some goon was cheering.

Chambers looked round vaguely to find the flag wavers he was firmly convinced must be there. He walked a few hesitant steps.

"Plant the flag!" A voice said in his earphones.

Gulping with nervousness, he took the flag in both hooks and forced it down into the dust. It wanted to fall over until he kicked a pile of pumice dust up with his foot.

"That is that, then, gentlemen." Admiral Chuinski was obviously extremely uncomfortable in his spacesuit. "Now we can all adjourn." He signalled with a quick gesture.

The pumice-dusty surface of the Moon split open. Tremendous valves rolled aside. Handlers came out, dwarfing *Discovery II*—they had been designed to handle the latest interstellar cruisers—and bundled the battered little ship into the airlock under the Moon's surface. The reporters and the reception committee scuttled back to their vehicles and followed the handlers.

At the last minute, someone remembered Chambers and Lawson and they scrambled aboard a truck. Then they were inside the Moon, back in clean, natural air again.

A rubber-necked reporter, sitting next to Chambers, said: "You boys really made history. And Naval H.Q. cleared all that area of the Moon and reconverted it back to craters and dust, just for this. It must have cost plenty."

"Wasn't it worth it, then?" Lawson said unexpectedly.

"Of course." The reporter laughed embarrassedly. "Don't think I'm belittling what you've done. Hell, everyone knew something was brewing when 2975 came around. Plans must have been made back in '70, at the latest."

"The plans might have been made," Chambers said sourly. "But the goons who carried 'em out——" He stopped. Space Navy personnel didn't wash their dirty linen in public.

"All this dust, and the craters," the reporter said again. Money spent freely obviously impressed him.

Chambers kept a tight rein on himself until he was through the locks and into the lush green valleys threaded by lazy silver rivers, and the artificially renewed natural atmosphere of the Moon. *This* was the Moon as he knew it. Not that hellish pumice dust they'd faked up like a movie set just so he could plop *Discovery II* down with all the trimmings.

He vented himself of his feelings to Admiral Chuinski. "I expected a professional job on that ship. After all, it wasn't difficult to re-create an

exact duplicate of the first ship to land on the Moon." He breathed insultedly, and finished: "I'd like an official inquiry into all the defects that arose."

"Ah, I'm sure you would, my boy," Chuinski burbled. "But I don't think that will be necessary. You see, Lieutenant Lawson was well aware of what would happen. He sabotaged the radio. A cruiser was following your passage and shot the dust at you—oh, and a working party landed and—ah—fixed your oxygen bottles and jets."

Chambers' mouth opened and closed. His eyes took on the animation of a dead cod fish. "Deliberately?" he spluttered.

"Deliberately."

"You see, Cap," Lawson said hurriedly, "all those things happened on the original flight."

"Why not inform me?" Chambers made that cold.

"Simple," said Chuinski, beaming like a politician kissing a baby's head. "We wanted to re-create the same ship that made the first flight.

We wanted to re-enact the journey."

"Well?"

"There has been, in some quarters, allegation that the Space Navy isn't what it used to be. No guts. Couldn't do what the old timers could. So—we chose a man we thought would react correctly, and let him face the same hazards that faced the original crew."

"You sent me out there—in that crate—knowing what would happen——"

"You came through."

"Yeah—just."

They went out, Lawson grinning, yet giving his Captain nervous glances. Chambers was seething—and then he recalled the four days in *Discovery II*. They'd been short on oxygen. They'd made what amounted to a crash landing. They never could have taken off again—he, as commander of the vessel, knew that.

"We'd have stuck here for ever," he growled.

"How's that?" asked Lawson.

"I said: 'We'd have stuck

here.' I meant, if the Navy hadn't been watching us, and we knew that, remember, and if there hadn't been the Moon as we know it waiting for us, with air and food and warmth—we'd never have got back to Earth."

"So?"

"Well, then, we didn't re-enact the first space flight correctly. We did something wrong, somewhere. Those first flight boys must have been able to do something we couldn't so that they could get back." He smiled bitterly. "So the Admiral's wrong. The present-day Space Navy has gone to the dogs."

Admiral Chuinski's voice came heavily from behind them. "Don't belittle yourself, captain. You did all right. You did all and more than could have been expected of you."

"I don't see——" began Chambers.

"The first ship made the flight to the Moon, in exactly the same circumstances as you did. We checked on that. You see, captain, they just didn't go back—ever."

They were nature's darlings—

THE DILETTANTES

BY ALAN INNES

ARTRUI WAS ADMIRING Belshaw's new nail varnish when Melinda joined them in the breakfast room. Listlessly, she sat down, punched the button for fruit juice, and scowled at the two men. Neither of them paid her the slightest attention.

"I like it," said Arturi enviously. "There's something quite fascinating about the way all those tiny flecks of colour shimmer when you move your hands. Ginaldi?"

"Yes." Belshaw moved his fingers and smiled at the result. "He is experimenting with photon-trapping compounds and sent me this as a sample. Neat, isn't it?"

"Very." Artrui glanced distastefully at his own emerald-tipped fingers then smiled as May entered the room. May was the latest addition to the composite group, and so was extremely popular. She sat down and punched for a full meal.

"What are we doing today?"

"I've no idea." Artrui sat down beside her and, with blatant intimacy, sipped from her glass. "I suppose we could go over and see Doray. They

tell me that he's worked up some wonderful new fabrics, gossamer with iridescent panels. He's got some new models, too, from Atheon, I believe. Atheon or maybe Xenadath, some outlandish planet like that."

"Yolande," corrected Melinda. No one took any notice of her.

"I've seen Doray's collection," protested Belshaw. "He hasn't anything really new, just reworks of his old ideas. I found them intensely boring." He looked thoughtful. "We could go to the Stadium."

"No," said May decisively. "I wouldn't like that."

"No?" Belshaw shrugged. "Well, I must admit that the spectacle of trained animals fighting each other to the death begins to pall after a while. What would you suggest?"

"I don't know," snapped May impatiently. "Can't you think of anything?"

"The races?" Artrui sighed at her expression. "No?" He frowned, resting the tips of his fingers against his temples in an exaggerated gesture of concentration. "Calthin? He

can usually be relied on to supply something interesting. Helstart? They say that his single-dreams are out of this universe. Malpique? He has some interesting exhibits in a aborted mutation which should prove interesting if you like that sort of thing."

"I don't," said May curtly.

"We could go underworld," suggested Belshaw. Like Artrui, he was worried by May's lack of response. "From what I hear it would be most interesting."

"Is that all you can think of?" May didn't trouble to hide her impatience. "I'd rather be immolated than have to wear one of those awful suits. What's the good of going to a place where you can't do anything?" She stretched, lifting her slender arms until the sheer gossamer of the robe she wore fell back along their smooth perfection. "What I need is something novel and exciting. Maybe..."

"A hunt," said Belshaw quickly, before she could finish what she was going to say. "We've never been on a hunt before. It should prove amusing."

"Where?" Artrui sounded dubious.

"Alpace. The entire planet is a game reservation, and

we should have some good sport."

"Killing things, you mean?" Artrui still didn't sound too eager.

"Yes." Belshaw warmed to the idea as he thought about it. "We can get guns and things from the Warden. How about it?"

"Well..." Artrui looked at May. "It's not such a bad idea at that. It would be novel, and might turn out to be amusing. Does the idea appeal to you, May?"

She yawned.

"We could ask Purliss and Susan," continued Belshaw desperately. "They would be pleased to join us, and both are amusing company. Please say yes, May."

The Warden was an old man from the Cappellian system and he had a proper awe of the stellar aristocrats. He received them in his office and awaited their pleasure as they wrangled among themselves.

"We'll make this a proper expedition," said Purliss. He was a coarse type and held peculiar theories of his own. He consistently refused to wear nail varnish and accepted his social inferiority with a blatant carelessness which irritated rather than amused.

"That is why we are here," said May coldly. She stared at the Warden. "Your advice?"

"I would suggest the hunting grounds close to the lodge." He bowed as he spoke. Titles weren't necessary when dealing with the stellar aristocrats, but abject politeness was. "There is easy sport there, small animals without fang or claw. They are harmless and easily killed. The grounds are within easy flying distance so that you could reside at the lodge during your stay."

"We want none of that," snapped Purliss decisively. "We came here for proper sport, not the emasculated version of your target ranges." He looked at the others. "I suggest that we take some provisions and attendants, and have a heli drop us where there is some real game." He bared his teeth. "Big game. I want to hear something yell when I pull the trigger."

"How revolting!" May accentuated a yawn with her ringed fingers. "Really, Purliss, must you be so primitive?"

"Why not? The whole idea behind a hunt is to go primitive." He leered at her as he spoke. As he was not in the same composite as May, he saw no reason to pander to her whims, and he knew that he

was too far down the social scale for his discourtesy to make the slightest difference. He even winked at Melinda and she, responding to his friendship, winked back. They smiled at each other to Susan's annoyance and the pleased approval of the other two men. With any sort of luck at all they might be able to persuade Purliss to take Melinda off their hands. Susan, while no great acquisition, couldn't possibly be as boring as Melinda. Artrui mentally decided to sound Purliss out on the subject as soon as possible.

"I suppose that it would be safe enough," said Belshaw dubiously. As the hunt had originally been his suggestion, he was eager to see it work out to everyone's satisfaction. "As you say, Purliss, half the fun is in getting away from luxury and really roughing it. You agree, Artrui?"

"What?" Artrui blinked. "Oh, yes. Yes, of course."

"That's settled then." Belshaw glanced at the Warden. "See to it."

"At once." The man hesitated. "You would have no objection to one of the attendants carrying weapons?"

Purliss looked annoyed. "Is that necessary?"

"The beasts are dangerous,

sir. They have been especially bred so, for the benefit of seasoned hunters. The man, a warrior he is called, will be armed for the sole purpose of protecting you from harm."

"I don't like it," said Purliss. "As the hunters, we should be the only ones to carry weapons."

"It is merely a precaution, sir," the Warden explained. He hesitated. "A party similar to yourselves went out shortly before my arrival here. They refused to take a warrior with them and were severely mauled. Two women died and two men are still undergoing plastic surgery. Naturally, the Warden responsible has been immolated, but the damage was done."

"I see." Purliss smiled with a touch of cruelty. "If we insisted, would you permit us to go out without this man, this warrior as you call him?"

"I could not prevent you, sir." Sweat glistened on the Warden's forehead. "But if anything should happen to you..."

"Oh, leave the man alone," snapped Melinda impatiently. "He's only doing his job." She ignored the Warden's look of gratitude.

Among the rest of the

party, the warrior looked like a crow in the midst of a flock of birds of paradise. Even the soft-footed attendant androids wore bright colours, usually to match the tints of their skins, but he alone wore sombre black, relieved only by a simple golden insignia. He set up a small tent close to the sleeping quarters, and spent much time checking his equipment and odd-shaped weapon.

Purliss, always rather peculiar when it came to dealing with inferior races, found him a fascinating subject for study. He waited until the others had retired and then went outside to talk to the warrior. He found him busy cleaning his weapon.

"Do you often do that?"

"Clean my gun? Sure."

"Why?"

"So that it will work when I want it to." The man stared at Purliss. "You aren't a regular hunter, are you?"

"I'm a stellar aristocrat," said Purliss. He was amused. "Do you realise what that means?"

"No."

"It means that I and my race own almost the entire galaxy. It means that we have over two thousand subject races working solely for our benefit."

"That's nice."

"You are supposed to call

me 'sir' when you address me," reminded Purliss. He sighed. "Nice? Well, I suppose that it is, in a way. We don't have to work because we can have anything we want when we want it. We have nothing to do but amuse ourselves and, because of that, we are bored all the time. Can you understand that?"

"I think so. Are the rest of you aristocrats, too, sir?"

"Yes. Why do you ask?"

"No reason. Do all your menfolk paint their faces and hands? Sir."

"You object?"

"Not me. We just don't do it back home, that's all. But you'd know about that, wouldn't you?"

"Sir," reminded Purliss. He shrugged. "I suppose that it is in the records somewhere. Naturally, we can't possibly remember the details of every new world we conquer."

"Earth."

"Earth?" Purliss frowned. "Did I hear something interesting about the conquest of that planet?" His face cleared. "Yes, I remember now. A backward world, but the resistance to our fleets was incredible. Incredibly stupid, that is. Naturally, you couldn't possibly avoid conquest and assimilation."

"You pretty near wiped us out," said the warrior. "At least, so my great-grandfather used to tell me." There was no resentment in his voice. The conditioning he had received made it impossible for him ever to hate those with whom he came into contact. His idiom had been left as an amusing peculiarity. Purliss looked surprised.

"As long ago as that? I had the impression that the incident occurred only a short while ago. Probably you have an extremely short life span." He yawned and moved towards his tent.

Hunting started at mid-morning and continued without a pause until mid-day. It was slaughter. The weapons used didn't make a sound, but they killed just the same, and their silence was more than compensated for by the screams of disrupted animals. The androids, emotionless flesh and blood robots, moved quietly about as they collected the bag. Once there was an argument between Susan and Melinda as to who had killed a certain animal. And once May screamed with rage as she shot a careless android who had spattered the hem of her robe with

blood. Other than that, the morning passed without incident.

Over the mid-day meal, Artrui talked about it. "This is real fun," he said. "I never thought that killing things could be so amusing. Did you see how Belshaw blew the back legs off that funny creature and it tried to run away?" He chuckled at the memory. Purliss nodded.

"I've often thought that we miss a lot in not going primitive more often than we do. The feel of the wind against one's face, the smooth precision of a weapon, the cunning needed to hit the target." He sighed. "Our ancestors must have been great fighters to have left us such a heritage."

"There is nothing clever about living in dirt," snapped May. She had changed her robe, but the incident of the blood had annoyed her. "Surely even our ancestors knew that. They conquered other races and then made those races fight for them." She yawned. "Must we talk of such things? History can be so tiresome."

"History is what has made us," reminded Purliss. He looked up as the sombre figure of the warrior came toward them. "Yes? What is it?"

"I thought that I'd better warn you, sir," said the warrior easily. "All that noise the animals have been making is going to attract some company. There are large animals in this forest, as well as small."

"So?"

"So, I'd suggest that you give up hunting for the day, sir."

"Insolence!" Artrui was on his feet before Purliss could reply. "How dare you address us so? I shall complain to the Warden! I . . ." He broke off, his mouth still open. "What was that?"

"One of the big animals I was telling you about, sir." The warrior unslung his weapon. "Hear it?"

They did. It was a kind of hissing roar coupled with the sound of a great body crashing through the undergrowth. All fell silent and, with the exception of the warrior, all seemed paralysed with terror.

"No need to be scared," said the warrior calmly. "Just get those guns of yours and shoot when you see it." He paused, listening. "It's getting close. You'd better hurry if you want to kill it."

"Let's get out of here!" Artrui, without waiting to see if anyone followed his

example, turned and ran from the sound. Belshaw followed him, knocking down May in his frantic hurry, closely followed by Susan. Purliss stared wildly at Melinda, and May, who had regained her feet, screamed.

The cause was just before them.

It was the largest animal they had faced, and yet it was little more than the height of a man. It had a round, furred head, glistening with fangs and, as it crouched ready to spring, its claws dug furrows in the ground. It hissed, staring at them with cold, yellow eyes, then tensed itself to charge.

The warrior shot it dead.

He lowered his weapon and stared sombrely at the headless body before him. Next to him, Purliss was busy being very ill, and the two women had fainted at the sight of the beast. The others, human and android, were not to be seen.

Purliss, slowly recovering from his retching fear, knew that if it hadn't been for the warrior the beast would have killed them all.

"Thank you," he said. "You saved our lives."

"Nothing to it," said the warrior calmly. "All you had to do was to stand and fire

those guns of yours." He seemed to remember something. "Sir."

"We couldn't." For some reason Purliss felt it necessary to explain to this member of a conquered race why that was so. "We are a long way from the primitive," he said, "and aren't used to violence. The thought of death, our death, is horrible to us. We can't help it. At the prospect of personal danger we suffer from a peculiar numbness which affects our reactions. I don't know what it is."

"Cowardice."

"What?" The word was strange to Purliss. "What was that you said?"

"Nothing." For a long moment the warrior stood and stared at Purliss. "You don't have to explain. I understand all right . . . sir." He slung his weapon and moved away from the dead beast. Purliss stared after him.

It was nothing really, nothing at all, and yet it disturbed him. Purliss, a Stellar Aristocrat, had met the members of many subject races during his long life, but never before had he met one with the expression this man of Earth had in his eyes.

Contempt.

He wondered why.

Mind over Matter

by Kenneth Johns

WHAT WILL THE FIRST men to conquer space really be like? We assume that they'll have the usual assemblage of limbs, eyes and fingers. We know that their physical welfare and environment in the spaceship will have received the most meticulous attention given to any project since time began. But what about their minds, their feelings and their emotions?

We will staff the first spaceships and the base on the Moon with healthy, young scientists. But, in doing so, we will be creating a psychological problem that, to find a happy solution, may force us to a mature reconsideration of all our moral and social values.

Material dangers are being studied in advance. But departments of space medicine are already attempting to study the dangers of space in relation to the human mind. Man is adapted to life on Earth and who can say, at this time, what physical and mental changes

may be forced on him by the environment of space? The inner functionings of the human mind are still little understood and it is more than merely likely that phobias, unnatural fears, will take control of the minds of the first spacemen.

We all, at times, make Freudian slips and errors due to the unconscious part of the mind reacting against the conscious. Any one of these slips aboard a spaceship could prove fatal to all the crew.

The human mind will be under certain pressures in space not present on the surface of Earth. Perhaps the most outstanding of these is the fear of falling. Free fall conditions have been attained by pilots above Earth for periods of only six seconds or so; thus most of the information we do have is highly theoretical. The old, familiar dream of falling—although you never hit the ground—must recur with shattering impact on men living under free fall conditions.

When this dream was born, if you fell out of a tree and your tail or hand failed to catch a branch, you smashed to the jungle floor or a carnivore snapped you up. This type of primitive hang-over may well have a decisive influence on spacemen when they take their ships out into space.

Another strong factor is the fear of loneliness. Not just the lack of other people; that can be rationalised and the job performed with the knowledge that you're going home one day. There is a loneliness that strikes deeper, the fear of leaving your race and the planet of your birth and striking out where no man has gone before. This could easily stir such deep emotions that spacemen would lapse into mental and physical paralysis. The mother-image of their planet would grow stronger with every mile travelled.

Psychiatrists may try to transfer this mother-image from Earth to the spaceship. They will indoctrinate spacemen to regard their little egg of air and warmth as not just

their new home, but as their complete be-all and end-all, their very reason for existence. The spaceship, to the crew, will be as their mother-image the womb. What fresh problems this will create, when the time comes to leave the ship and set up bases on hostile planets, remains to be seen. This problem may have to be overcome by retransference of affection.

Spacemen may be one-way-only trippers, becoming, when they make planetfall, true colonists of that planet. They may eventually forget that they were ever Earthmen. They could even become nostopaths, men with a fear of returning home, the direct antithesis of home-sickness.

It is even feasible to consider some spacemen for ever wandering from planet to planet, unwilling to stay on one world, the Flying Dutchmen of the stars.

Boredom with space travel, the monotony of the same routine, growing friction and hatred for the same old faces, the many fears pressing in on the mind and the dark, subconscious upwellings are all

receiving careful attention in order that, one day, we will be able to confidently travel between the planets.

Spaceship designers will have to listen to the psychiatrists. And the psychiatrists are going back to the era of wooden walls and months-long journeys undersail. "Keep the hands busy and you need never fear a mutiny," they said in Nelson's day. The space age need not fear mutiny among the crews, but there must be safeguards against mutiny of the mind against the body.

Spaceships will not be built with every labour-saving device and automatic controls. Instead, quite deliberately, the designers will build in many jobs that will have to be performed manually. On a long journey the crew will be kept busy—quite apart from their scientific observations—giving them the safety valve of having something to grumble about. Keep the hands busy—and, too, give them the chance to do a little moaning and they'll be happy.

One deep fear in the mind will be that of sterilisation by

nuclear and cosmic radiation. Temporary and permanent sterilisation has been known in scientists working with X-rays and with nuclear reactors. The gleaming spire of the spaceship may well come to be thought of as the symbol of loss of manhood instead of a symbol of virility. Very few will wish to venture into space with that fear holding them to Earth.

The utter incomprehension of space, its complete negativeness, will affect the human mind. No matter how often a man tells himself that space is a perfectly normal fact in the scheme of the universe—even going one step further and admitting that this Earth and the people upon it are the abnormal factors—his mind will never accept that ruling. Our minds have been nurtured through too many thousands of years of heredity and familiarity with things Earthly. At the moment, we cannot even begin to conjecture what the reactions of our unconscious minds will be to space.

A number of ingenious devices and subterfuges have been suggested to overcome

these difficulties. Why not hypnotise the crew before take-off, giving them post-hypnotic suggestions so that they may operate the ship during the voyage, and then bring them out of it by another post-hypnotic order to be triggered by circumstances or by a radioed key phrase. Or make the ship fully automatic and keep the crew under deep hypnosis all the way.

There is some value in these suggestions, but a grave fault lies in the lack of reaction of hypnotics to sudden emergencies. Not all emergencies can be prophesied in advance.

Hypnosis could successfully deal with fears of weightlessness together with space sickness, nervous disorders and, particularly, of boredom. An extension of this idea would provide a hypnotist psychiatrist as a member of the crew, to wake at predetermined intervals and ensure that all is well.

Another solution that has been suggested is the idea of sending a crew of men already mad. Although at first sight the idea of sending men who

are already afflicted with mental disorders may appear a sound scheme, the disadvantages would outweigh any benefits. Of what use would these men be when they arrive? And could they be trusted to handle the complex machinery of a spaceship? Certainly, men who have one obsession—which, in theory, would make them immune to the terrors of space—would be perfectly sane in the matter of handling a ship.

Certainly any means must be used to further Man's spatial impetus; although the idea of using persons who are not mentally balanced is repugnant when so much effort is being put into conquering mental diseases.

Continuous drugging may have its uses. Watches would be assigned for necessary ship work not performed by automatic machinery, and men would take their turn in rising, doing their job and then relapsing into drugged unconsciousness. Physical reactions to the continuous use of drugs would have to be considered so that the crews would not arrive too weak-

ened to be of use. It is interesting to note that some forms of neuroses are now treated by keeping the patient asleep for many weeks by means of drugs.

Peter Phillips, noted writer, has suggested keeping the crew in a long, drawn-out drunk. Taking aboard, as part of essential stores, a huge quantity of alcohol and using it to keep the crew happily befuddled has attractive possibilities. The same arguments of incapacity to perform work also apply here. And some scientists have a notorious capacity for alcohol!

The imagination boggles at the thought of the conditions aboard and the thought of building a Moon station whilst suffering from a gigantic hang-over is amusing—and frightening.

If mankind aims for the stars, he should preserve some dignity in the process. Perhaps suspended animation or the marked slowing down of physical and mental functions will be the solution.

If men journey without these artificial aids, every

possible device will have to be used to keep them sane and happy. Hobbies, do-it-yourself kits, stimulating records and arguments, intellectual and emotional, would have to be part of the equipment.

Any mature and thoughtful survey of the conditions affecting the minds of spacemen cannot omit reference to the problems of sex. For the mind cannot be separated from the body. Here is the region where all precautions must break down under the impact of man's normal nature, unless the problem is squarely faced. Whilst young men have spent long periods isolated from the company of women, there has always been the basic, unbidden knowledge that they were there within reach and that, someday, the men would return to a normal life.

Isolated on some alien planet, alone, conscious of the desolation around, so strange to Earthly eyes, with the airlessness, difference in gravity and eternal danger to face, a man's mind will not react in the way it would on Earth. It

would be five years or so before a man could be relieved from Mars, under present-day estimates of supply trips. Various ideas have been put forward to solve this vital problem, many with merit. All run quite contrary to our accepted social mores; that is, of the moral conduct of the Western world.

To many inhabitants of the Earth, the idea of one wife sharing a number of husbands is perfectly normal. We cannot apply a system of ethics evolved by one section of this planet to the other alien worlds we may one day inhabit. Not at first, at any rate. After the settlers have moved in and the geophysicists have replanned the world, perhaps standards will revert to what we have come to expect here on the mother planet.

Other points must be considered. Because millions of micrometeors have the effect of sandblasting glass in space, the astronauts will, to all intents, be sightless most of the time. The cold blaze of the myriads of stars in all their

glorious colours will not be a normal part of the scenery. The sandblasting effect has already been noted in current experimental rockets and it has also been noted that intense ultraviolet light from the Sun darkens glass, to add to the blinding effect.

Claustrophobia is just another of the many problems that will beset the minds of those heading out into space. But, in spite of all the problems, physical, mental and engineering, that must be overcome, one thing is certain . . .

Whilst the stars continue to shine down on us, then man will continue his efforts to reach them. When he meets his first being from an alien planet, how many more headaches will be created, to be patiently solved by the psychologists? But these specialists know one fact very clearly. Man can conquer, subdue or turn to his own ends everything he comes up against in his expansion.

The greatest enemy that man has is—himself.

Nothing could be more
important than—

THE LETTER

BY ALICE BEECHAM

THE POSTMAN WAS LATE that morning and Peter was getting more and more impatient as the time drew near for him to leave for school. A dozen times he ran to the window at the sound of footsteps from the street below, only to be disappointed by some passer by. Mary stood it for as long as she could, then burst out with unaccustomed violence.

"Peter! For heaven's sake! Sit down and finish your breakfast."

"Sorry, mother." He dabbed at his food, hardly aware of what he ate, so intent was he on the sounds from outside. A heavy tread came towards the door of the apartment, hesitated, then the rattle of the letter box mingled with the double knock. Three letters fell to the mat and,

almost before they had landed, he had snatched them up. His face fell as he examined them. A circular, a bill, a letter from a friend to his mother. Slowly he carried them to the table and sat, staring at his unwanted meal.

"Anything interesting?" Mary reached for the letters.

"No."

"Here's one from Mrs. Conway; you remember her, surely? You used to play with her boy, Ginger."

"Did I?" He was young enough to make no effort to hide his disappointment and, staring at him, Mary felt a sudden pity.

"Don't worry about it, Peter. It will come one day."

"It should have come by now," he said, and she could see that he was very near to tears. "It should have come

weeks ago. They've forgotten me, that's what they've done."

"These things take time, Peter," she explained for the hundredth time. "They have to check your application and medical record. Then they have to go through your tests and everything. Why, it's hardly been two months since you sat for the examination."

"Eleven weeks and two days," he corrected. "That's lots of time. If they had wanted me they would have sent for me by now."

"They will," she said hastily. She could tell by the trembling of his lower lip that he was about to cry, and knew that he would feel ashamed of himself afterwards for having done so. She glanced at the wall clock. "Goodness! Look at the time! Better get off, Peter, or you'll be late."

"I don't want to go to school," he said, but got down off his chair and reached for his coat anyway. "I'll bet it never comes. I just know that it won't come and all the boys will laugh at me and . . ."

"Of course it will come." Mary passed him a handkerchief and pretended not to notice. "The man said they would let us know, and they will." She adjusted the collar of his coat and wiped his eyes. "There, now. I wouldn't mind betting that the letter will arrive while you're at school."

"It won't," he said weakly. "I just know it won't."

"If it doesn't then I'll go down to the office and find out why," she promised. "It could have got lost, or mislaid, or anything." She lowered her head for his kiss. "Run along now, like a good boy—and mind the roads."

She smiled as he waved goodbye, then, as the sound of his shoes died away, she lost her smile.

Another day. Another round of routine with nothing to break the monotony but the thought of Peter coming home. She sighed as she began to clear away the breakfast things. The beds she had made before breakfast, and aside from

dusting, there was nothing to do.

Tiredly, she switched on the T.V., glanced at the syrupy smile of a commercial announcer, and hastily selected a different channel. She tuned in on the middle of the latest instalment of a soap opera and sat down, staring at the screen, gaining some vicarious pleasure from the artificial tribulations of others. The instalment ended and darkness filled the screen, a thick, velvet darkness filled with the glowing points of stars and the shrunken ball of the sun. Space! And the continued adventures of Captain Blaze, space marine.

She turned off the T.V.

The dusting took too little time so that she was finished long before lunch time. Idly she checked the contents of the deep-freeze, wondering whether to restock now or to wait until the end of the month when her cheque came. Sight of some of Peter's shoes made her decide to wait; she would need what money she

had for more immediate necessities. Picking up the shoes, she took them to his room and, while there, decided to go through his things to see if there was anything which needed mending. She found some socks, a shirt and a pair of trousers with a rip down one leg. Holding them in her hands, she glanced around to see that everything was in order, remembering the time when his room had always looked as though it had been the scene of an explosion.

Now, it was surprisingly tidy. The framed blow-ups on the wall, the photographs of the planets taken at the Luna Observatory, were clean and devoid of fingermarks. The model rocketships, the row of popular fiction and the well-read elementary text books dealing with astronomy, ballistics, rocket engines, atomic piles and the boiled-down layman's version of the astronomical almanac which she had bought him on his last birthday, stood dusted and clean. He had even put away

his drawing board and paints. Struck by a sudden curiosity, she opened his cupboard to see how he was getting on.

The work was crude, primitive even, but the painstaking attention to detail and the laboriously neat lettering showed how engrossed he was with the schematic diagrams of the early spaceships. She stared at it for a long time, remembering how, long ago now, she had seen this same vessel, not as a coloured drawing on paper, but as a real and vibrant thing. Twelve years ago? Thirteen? She had been carrying Peter then, and he was twelve. Almost thirteen, then. A long, long time to be alone.

With sudden irritation she thrust the drawing back into the cupboard and, taking up her mending, returned to the living room. It was almost with relief that she discovered that she had no thread.

It was an excuse to go out. It was an excuse to get away from the walls which cramped her, and even as she rose

and put on her coat, she planned to have lunch at the automat and take her time at her shopping.

She was hovering in deliberate indecision at the automat self-serve bank when Lorna called to her.

"Mary! Well I never. What are you having?"

Mary sighed as she hastily selected a salad and ice cream. Lorna meant well, but she was inclined to be wearing with her obvious sympathy for the widow and her artificial bonhomie.

"Salad?" Lorna pursed her lips as she noticed Mary's choice. "This weather? Still, I suppose you have to watch the waist line." She smoothed her skirt over her own well-controlled figure and smirked a little. "I think I'll have the steak. I'm down on my calories and I can always skip a meal. Not that Harry would mind if I put on a little weight; he always says that you can't have too much of a good thing, but I say . . ."

Mary let the too-strident

voice blur into formless noise as she led the way towards the end of the bank to collect her tray. It was a trick she had long since learned to use when with Lorna, and sometimes she felt a little guilty about it.

She became aware of what Lorna was saying as they sat down.

"... And almost knocked me over. He apologised, of course; such a nice boy you have there, Mary, but it gave me quite a turn."

"Peter?" Mary spooned at her salad and wondered if she had missed anything important.

"I was saying how Peter almost knocked me down this morning. He must have had something in his eye, because they were all red and he couldn't have seen me." Lorna sighed and assumed her martyred expression. "You don't know how lucky you are having such a fine son. If I could have children I'd have a dozen at least, but Harry just won't hear of my adopting

one. He says that if we have children they've got to be all ours, none of your unwanted or orphans, or maybe mutants from those no-good spacemen. I..." She paused, her loaded fork half-way to her mouth. "Oh, Mary! I am sorry!"

"Why?" Mary had long since lost her fierce defence of everyone connected with space. Lorna looked uncomfortable.

"Well, you know, your husband..." She bit at the steak, her eyes anxious as they searched Mary's face for signs of annoyance.

"My husband died in space," said Mary. "You know that, but you don't have to pretend that you think all spacemen are like he was. John was different."

John was more than just different, she thought. He was special, the only man she had ever found it in her heart to love and she had nursed his memory for—how long? Twelve, no, thirteen years. She felt a vague sense of guilt at having to fumble for the exact length of time.

"Was anything wrong with Peter this morning?" Lorna, her meal finished, was eager for gossip.

"He's expecting a letter," said Mary shortly. Somehow the meeting with Lorna had robbed her little excursion of all its charm. "It hadn't arrived and he was upset."

"The answer from the space academy?" Lorna giggled at Mary's expression. "Don't tell me that you're surprised I know all about it, Mary dear. Why, Peter has been full of it ever since he sat for the examination. Every time he sees us he talks of nothing else but rockets and planets and stars and things. Harry says that he doesn't know what children are coming to nowadays, what with the T.V. and all. Of course, you won't let him go."

"Why not?" The calm assumption that she wouldn't made Mary curious. "Why shouldn't he go if he gets the chance?"

"Well, really!" Lorna

pushed away her empty plate and widened her eyes as though Mary had said something obscene. "Isn't it bad enough that you lost your husband somewhere near Venus?"

"Mars," corrected Mary. "John was lost on the trip to Mars."

Lorna shrugged. "Mars, then. Not that it makes any difference, if you ask me, where you lose your husband, if you lose him. And after all you've done for him, too. Looked after him since he was a baby and never even thought of putting him into a creche, which a lot of other women would have done in your position, my dear, and found themselves another husband to look after them. Lorna paused for breath. "And you so young, too. And brave. My dear, you'll never know how brave I think you've been." She dabbed at her eyes.

"It wasn't bravery," said Mary, and knew that she meant it. Peter had saved her

from her grief. In the new, small life she had been able to forget her sorrow, so in keeping him with her, she had been motivated, in part, by selfishness.

"It was brave," insisted Lorna. "And now he wants to leave you, and go all that way among all those dangers, and never even see you from one year to another. It isn't fair. He shouldn't want to leave you. Still," she giggled again, "there's not much chance of his going, anyway, is there? Harry says that it would be far too expensive for you to manage. Not that we know how much money you have, dear, we wouldn't think of prying into other people's affairs, but pensions are so small, aren't they?"

Mary stiffened, feeling a sudden anger, then relaxed as she remembered that Lorna was the human equivalent of a parrot. She was curious, but there was no harm in her and, often in the past, she had proved herself to be a true friend. Also she was quite

right. The pension *was* small.

"There's a scholarship," Mary explained. "If Peter passes the examination he will win it. Also, as a space-orphan, he is entitled to a special grant to see him through the academy. Otherwise I shouldn't be able to even consider it."

"But you don't mean that you will actually let him go?" wailed Lorna. "Mary, my dear, you simply can't!"

"He wants to go," said Mary as if that explained everything, and to her, it did.

"But the risk!" Lorna looked baffled. "I simply can't understand how you could let him face all those dangers and him so young. And what future is there in it? Harry says that they hardly ever have time for any private life at all, even though the pay is good, not that many of them ever live to collect it, and it's a shame, if you ask me, that young boys should be taken from their mothers and sent all the way up to the

Moon." Emotion made Lorna speak with even more than her usual incoherency. "Why, if you let him go you won't even see him for at least a year."

"Three months," corrected Mary. "He'll go to a ground school for basic training until he's fourteen, and I'll see him every three months during that time. Then he goes to Tycho for two years."

"That's what I said." Lorna was triumphant. "Two years! Imagine that! Why, it isn't decent." She fumbled for her bag and insisted on accompanying Mary almost to the apartment building.

It wasn't until Mary was opening her door that she realised that she hadn't bought her thread and, with the door half-open, she considered whether or not to go back for it.

The sight of the envelope made her change her mind.

It lay on the mat, obviously delivered by the afternoon mail, a long, narrow, official-

looking envelope, with cancelled stamps, and in one corner the unmistakable symbol. Slowly she stooped and picked it up.

It was addressed to her, not Peter, but she knew that it concerned him far more than herself. She carried it into the living room, throwing her coat across the back of a chair, and sat before the radiant panel. Even then she didn't open it, but sat with it in her hand, staring at it and trying to make up her mind.

To save it until Peter came home or to open it now?

Thought of the terrible disappointment he must feel if it proved to be notification of his failure to make the grade decided her. In that case the letter would have to be lost. He would be upset, yes, but not so upset as he would be at a brutal refusal. With trembling fingers she ripped open the envelope and read the contents.

He had not failed.

It wasn't until she read the

notification to report and the enclosed form for her consenting signature that she realised how much she had hoped that he would fail. Then the decision would have been taken from out of her hands. Then she could have kept her son and not lost him to the frigid impersonality of the empty vastness which had already claimed the man she loved. Now, staring at the letter, she had to decide between keeping him beside her, or of sending him after his father to the cold isolation of the stars and perhaps to the same, nameless grave.

The decision was her's to make. To sign and so give Peter his birthright, his place among the new pioneers, his heritage from his dead father, or to hide the letter, destroy it, to live the rest of her life as a lie and to let Peter eat his heart out with regret at his having been weighed and found wanting. And yet, would it not be better for him to live a normal life? Lorna, despite

her foolishness, had been right in what she said. Space was lonely, and the men who travelled between the planets paid dearly for their ambition. Warmth, comfort, a loving wife and growing children, were not these better than the cold affection of metal and plastic, the hostile indifference of the void? She didn't know. She couldn't decide and yet the decision had to be made.

"Mummy!" She started, and thrust the letter behind her as Peter, home early from school, ran towards her. "Has it come?"

She looked at him, at his eyes bright with hope, and his young, flushed face so like that of the man she had married. She thought of his room and the things within it, of his ambition, so natural, of the bitterness and hurt he would suffer if she allowed herself to be selfish.

And she knew what she had to do.

"Yes, son," she said proudly. "It came."

Almost anything can make a—

Secret Weapon

by FRANK T. LOMAS

HER HAIR WAS THICK and dark, curling at the ends into an untidy bob. Her eyes were as black as space, long, heavily lashed, oddly slanted. Her face was pale, the creamy skin marred by a smudge of dirt on one cheek. Her lips were full, devoid of lipstick, but soft in their natural colouring. The rest of her was hidden beneath the grey denim of coveralls several sizes too big.

I stared at her and felt my heart begin to thud against my ribs. Beside me Johnson breathed a half-curse, half-prayer. "Holy cow! A woman!"

She smiled at us from the open end of the cargo container, patted her hair,

wriggled from the close confinement of the tube. "Hello, boys, aren't you going to welcome me to Mars?"

Neither of us spoke. She frowned a little, tiny lines appearing at the corners of her eyes, then smiled again as someone came up from behind us.

"Hello there! Maybe you can talk?"

"I can talk." Carter, the commander, nodded curtly at us, then gestured towards the cargo bin. "What gives?"

"We were opening the containers," said Johnson. "We found her inside one of them." He glanced at me. "Radford saw it."

Carter scowled, his face hard and suspicious. He stared

at the girl. "Who are you? What are you doing here?" Anger made his tones hard and brittle and the girl flushed as she stared at him. "Well?" he snapped. "Can't you answer?"

"Yes, I can answer." She stepped forward, moving stiffly as if from cramp, and stood before us. "I'm a stowaway. I hid in one of the cargo containers. I had some somnium but it couldn't have lasted long enough. I woke a few hours ago and have been scared ever since." She swayed a little. "I'm hungry and need a bath. Couldn't I tell you the rest later?"

"You'll tell me now. Who are you?"

"Helen. Helen Weaton. I'm free, white, and over twenty-one." The joke went flat and she knew it. "I'm a girl with itchy feet and a yen to get around."

"How did you get here?"

"I bribed a mechanic at the spaceport to load me into a cargo drum and ship me for

Mars." She shrugged. "Crazy, perhaps, but I didn't have enough money to pay for passage and I'd read somewhere that it could be done that way."

I opened my mouth and then closed it at Carter's frown.

"Go on," he said. "Why did you stow away?"

"I told you, I wanted to get to Mars."

"Yes, but why?"

"I got fed up with slaving in an office," she said. "I wanted adventure and I wanted to get into space. I've heard that a girl can earn big money on Mars and I wanted some of it." She stared defiantly at us. "Well, is that so wrong?"

It wasn't wrong, it was just unusual. People were wanted on Mars, Venus, too, though conditions were a lot tougher there. She was right in what she said about the prospect of big money to be earned on the red planet, a stenographer, for example, could earn five times what she could on

earth. The only barrier to a sudden exodus to the bonanza was the crippling cost of flight passage, which took all of the first three years earnings and had to be paid in advance. Helen, apparently, had tried to solve the problem in an unusual way. The trouble was that she hadn't solved it at all.

We stood looking at her for what seemed a long time. Neither of us spoke and, in the silence, I could hear the soft purr of the air conditioners and the varied metallic sounds of the station. It was cold and I shivered a little, the slight action breaking the mounting tension.

Carter sighed. "Very well, miss. You can rest and wash now. I can't offer you a bath; we haven't one, but you should find the shower satisfactory."

She frowned, biting at the soft bloom of her lower lip.

"No bath? I understood differently. Mars is arid, I know, but you have conver-

sion plants and water can't be that scarce."

"Maybe it isn't," said Carter quietly, "on Mars. But you see, we're not on Mars. We're on the Moon."

I caught her as she fell.

"It was the shock," said Kennedy, reaching across the table for the salt. "After a journey like that to step out and see you goons staring at her!" He clucked his tongue and shook his head. "It's a wonder that she didn't drop dead of heart failure."

"It was the reaction," protested Johnson. "She thought that she was on Mars." He looked up as the panel slid aside and Ryman entered the dining room. "How is she, doc?"

"As well as can be expected." Ryman reached for the bread. "These women! Crazy, the lot of them."

"How about that?" I stared at the tall, thin figure of the medic. "Could she stand the trip in the cargo container?"

"She did." He stared at me, his mouth full of canned steak. "What's on your mind, Radford?"

"Nothing special, but wouldn't she have frozen to death out there?" I jerked my head at the metal wall beyond which lay rock, and beyond which lay the stars. Ryman laughed.

"How long is it going to take before the comic-book idea of space has been educated out of the populace?" He swallowed and shook his fork at me. "The cargo container was sealed air-tight and the metal is painted with bright colours to allow for identification. That means small heat-gain. The ship wouldn't have dropped it until they were well within orbit, say a couple of hours from pick-up point. She wouldn't have radiated much heat in that time and would have absorbed a little from the sun. On top of that she'd taken somnium, and that would have slowed her metabolism almost to a standstill."

"She wasn't under somnium when we found her," I insisted. "How about that?"

"Too small a dose. If we hadn't picked her up she would have died long before reaching Mars."

"It doesn't add up," I said stubbornly. "If she was hoping to reach Mars then why didn't she take a bigger dose? Anyway, the whole thing seems crazy to me. How could she hope to reach Mars alive in a cargo container?"

"It's been done," said Ryman. He grinned at my expression. "I mean it. There's a report about it in one of the medical journals. A man tried it. He sealed himself in with spare oxygen, some food and water, plenty of warm clothes and a huge dose of somnium. The ship flung the container on course as they always do, and it was picked up three months later when it reached Mars. He was still asleep, still alive and, aside from losing twenty pounds in weight, unharmed."

"Why the warm clothes?" I

put my finger on the weak spot of his argument. "A body generates more heat in space than can be radiated away."

"Sommnium slows the metabolism," explained Ryman impatiently. "Less heat is generated and warmth is needed to guard against shock." He turned as Carter entered the room.

"Relax, all of you," said the commander. "I've set the screens on automatic. I want to talk to you and I don't want to have to repeat anything." He leaned against the wall, his face reflecting his weight of responsibility. "As you all know, we've a woman in the station, a stowaway. She must remain here until the relief ship arrives, several weeks from now, and it's best that we come to a working agreement. I've posted times for using the shower and the recreation rooms. She has promised to avoid everyone as much as possible and I want you to help her keep that promise."

"Why?" Kennedy crumpled

a slice of bread and rolled the crumbs between his fingers. "What's she made of, gold?"

"No, she isn't made of gold," said Carter evenly. "She's made of dynamite. I shouldn't have to tell you what I mean."

He didn't.

Station X was what they called it back on Earth. The place which everyone knew was around, but no one knew just where. It had been built back in the old days, at a time when to have a base on the Moon was to have the world by the tail, literally, and it had stayed, even though space flight had caught up and passed it. A hidden fortress buried in the Luna rock, armoured against almost everything, shielded, its location known to only a few of the top brass. Even we did not know just where it was; the skippers of the supply ships did not know: they delivered our supplies by container, throwing them in orbit to be picked up by the little ship attached to the station. Those containers were

tipped into a chute and wound up in our supply locker. The relief ship landed once a year and changed crews, and even then we had to walk over ten miles from the actual station before emerging to the surface. Secrecy was our one great weapon.

The atomic missiles in the underground launching racks were the other.

Day and night we watched Earth, watching for the tell-tale blossom of atomic flame which would herald the end of civilisation. One rocket trail from the east, ending in a mushroom in the west, and we would trip the levers and rain destruction on one half of the globe. We were a Damoclean Sword suspended over a cringing Earth. But we kept the peace.

And now we had a stranger among us.

"I'm not saying that she is a spy," said Carter seriously. "For a long time she seemed unable to accept the fact that she was on the Moon, not

Mars. I had to show her the watch-screens. When she saw Earth she almost passed out again."

"Poor kid," said Kennedy. "Of course she isn't a spy."

"It seems impossible," admitted Carter, "but the facts remain. She shouldn't be here at all; we can't get rid of her until the relief ship arrives, and we've got to live with her until it does. I . . ." He broke off as the panel clicked open and the next second we were all on our feet staring at our guest.

She had washed, arranged her hair, changed her clothes and applied make-up. Perfume hung around her like a cloud, a peculiar pungent scent which both irritated and attracted. It wafted towards us as she stood in the opening, and her figure, unhidden by the shapeless coverall, was displayed to perfection by the clothes she wore.

She smiled at us, her white teeth gleaming behind her ruby lips, and her poise was

something so perfect as to be unnatural.

"Hello, boys, am I welcome?"

Carter moved in one swift, flowing motion. He grabbed her arm, jerked her from the room, and slammed the panel behind them. The sound of it closing merged with Kennedy's low whistle.

"Bro-ther! Did you see that?"

"I did." Johnson licked his lips, his eyes envious as he stared at the panel. "What a woman!"

"Relax," said Kennedy half contemptuously. "You haven't a chance, not with a dish like that you haven't."

"And you have?"

"Why not?" Kennedy smiled like a well-fed cat and ran his fingers through his thick, dark hair. "What competition have I got here?"

I sat looking at them, not liking what I saw. Kennedy was right, of course, he was the most handsome man on the station, but that hadn't

mattered with no one to admire his good looks. The girl had made things different. I wondered just how much different.

Ryman grunted and fumbled in his pockets for cigarettes. "Better calm down, Kennedy," he said quietly. "You heard what the commander said. No fraternisation. Get your mind off the girl—and keep it off."

"Are you crazy? After almost a year stuck up here without even a pin-up to look at?" Kennedy laughed and helped himself to a cigarette from the package Ryman had left on the table. "What do you think, Radford?"

"I think he's right," I said seriously. "The less we see of her, the better. A woman like that could cause plenty of trouble in a place like this. Forget her."

It was easier said than done.

It took a week for the trouble to really begin. A week of mounting strain,

short tempers and poorly hidden jealousy. It had proved impossible to keep Helen in isolation—the station was too small for that, and we kept bumping into her. Carter had tried keeping her locked in his quarters but, somehow, she had persuaded him to give her the run of the station.

It was a bad decision.

For one thing she seemed always to be using the shower and, in a place designed for men only, it caused embarrassment. A man would open the door, catch a glimpse of her, and hastily retreat. Sometimes, though, he moved a lot less fast than he could have done.

I came off duty one shift feeling hot and sticky, with nerves tightened to the limit with peering at the watch-screens waiting for the tell-tale blossom of atomic flame. I grabbed a towel and headed for the shower, not thinking about our visitor, and when I did it was too late. She gave a little scream, snatched up her towel, and stared at me.

"Sorry." I was deliberately curt. "For a girl who doesn't do anything, you seem to need an awful lot of washing." I turned and was heading towards the door when she called me back.

"Don't go, please don't go."

I stared at her, not saying anything, and she lowered her eyes.

"I hope you don't mind," she said softly. "It's just that I can't seem to get around to my back. Will you soap it for me?"

"Do you always have this trouble?" I picked up the soap and rubbed it down her spine.

"Always." She gave a little wriggle. "At home my roommate used to do it for me."

"And here?"

"Does it matter?" She turned, still gripping the towel, and smiled into my eyes. "You know, Sam, I think that I could like you. I could like you an awful lot."

"Could you? What about Kennedy?"

"Him?" She shrugged. "He's just a pretty boy, but who wants a boy? I prefer a man, someone like you, Sam. Do you like me?"

"Nuts," I said, and left the shower. Johnson stood outside in the corridor doing nothing in particular. He glared at me as I passed. I ignored him. Kennedy stood there, too, a little lower down; he was watching Johnson. I ignored him, too. I wanted Carter. I found him talking to Ryman in the tiny dispensary. I came straight to the point.

"Carter, you've got to isolate that woman, she's dangerous."

"Just a minute, Radford." He glared at me and continued his conversation with the doctor. I didn't intend to be ignored.

"Listen," I said urgently. "There's going to be trouble if you don't do something to stop it. That woman just tried to make me and she's got Johnson and Kennedy

acting like a couple of jealous tom cats. You've got to do something and do it fast."

"Relax," snapped the commander. "You're letting your imagination get the better of you." He stared at me and a grin tugged at the corner of his mouth. "What woman would want to make you? Ask yourself that and you'll realise just how silly you sound."

I flushed. I haven't any delusions concerning my personal appearance, but I didn't like what Carter had said. I appealed to the doctor.

"Can't you make him see sense?"

Ryman shrugged. "What do you want me to do, Radford? Carter has questioned the girl and she appears to be just what she says she is, a stowaway who was gypped by a field mechanic and who wound up here instead of Mars. She won't be here much longer, but while she's here we intend to take advantage of our luck. Carter has

agreed to let her take over the cooking."

"Are you crazy?" I stared at the commander. "You were the one who first hinted that she might be a spy. What made you change your mind?"

He flushed and remembered his rank. "I give the orders here, Radford," he snapped. "Whatever you may think, we are still civilised people and will act as such. Helen is just an unfortunate girl who is lucky to still be alive. She will be treated with all courtesy while she is here. I want you to remember that."

"So she's got at you, too." I stared at him, not troubling to hide my disgust. Carter was a long way from being a young man and, as they say, there's no fool like an old fool. I told him so, and he blew up in my face.

"That will be all, Radford!" He was all rank now, all strict commander and outraged dignity. I recognised it and swallowed what I wanted to say, knowing that I would have been wasting my time.

I was glad to get out of the room.

Johnson came up to me a few days later and I could tell from his attitude that he had big news.

"Look, Sam," he said, after talking of everything but what he had on his mind. "You know the old man better than anyone else here does. Can he marry people?"

I gulped and made a show of adjusting the verniers on the watch-screens. I was on duty, and by rights Johnson should have been monitoring his own screens, but we had long ago grown to rely on the automatics and spent too much time in idle conversation. This conversation seemed to promise being anything but idle.

"I suppose he could," I said carefully. "Ship captains can, and we are beyond the atmosphere of Earth. The charter should cover the station." I chuckled. "Not that it matters. No one ever wanted to get

married here that I know of; no women, you know."

"But could he marry us?"

"Us?" I looked at him and played dumb.

"Helen and me, who else?"

He grinned and clutched at my arm. "Congratulate me, pal. I asked her an hour ago, and she said yes. Think of it, Sam! A girl like that willing to marry a man like me!" He couldn't seem to believe it and, looking at him, neither could I.

"What about Kennedy?" I kept my voice casual, not looking at him, pretending to be busy with the screens.

"Well, what about him?"

Anger made his tones sharp and brittle. "That playboy! Helen saw through him right away and wants nothing to do with him. She's a decent girl, Sam, and wants to settle down."

"Got it all worked out, haven't you?" I slammed in the automatics, tripped the recorders, and grabbed Johnson by the arm. "Come on, we're going to see Carter."

I almost dragged him from the duty room.

Carter wasn't in his quarters, nor was he in the dispensary, the dining room, the lounge or the library. We found him in the kitchens.

I say that we found him, but we heard him first. It was a peculiar sound, a sound once heard never forgotten. I had heard it before, from park benches, from the back seats of cinemas, from shadowed doorways, but I'd never expected to hear it in this station.

The sound of a kiss.

I felt Johnson stiffen at my side, then he lunged forward, slamming open the door and switching on the light all in one rapid motion. For a moment they stood frozen, like a tableau beneath the glare of the lights, then they broke apart as we entered the room.

Helen said nothing, just stood, her hair a dark cloud around the whiteness of her face, her mouth a ravaged scar. Carter blinked at us,

looking foolish with his lipstick-smearred face, his eyes glazed as they adjusted to the lights. Johnson stepped forward.

"Helen!" He stared helplessly at her, then at Carter. "You swine!" he shouted. "You filthy, dirty swine! Helen's my girl, mine, understand? I ought to kill you for what you've done." He lunged forward and I grabbed at his arm.

"Johnson! Control yourself!"

"Leave me alone!" He struggled in my grasp, his eyes wide and his mouth working with rage. I slapped him, hard, rocking his head with savage blows.

"Snap out of it, Johnson."

I slapped him again and slowly his eyes cleared. He whimpered, a sound like a baby which has been hurt almost too much to bear and, like a baby, he cried for the one thing he valued above all else.

"Helen," he whimpered. "Helen."

I thrust him outside the door, jerked my head at the girl and pushed her after him. "Watch him," I snapped. "Go with him and smooth him down." I almost gagged at the scent of her perfume and slammed the door after her retreating figure. Grimly, I stared at Carter.

"Well," I said bitterly. "Are you satisfied? Or do you want more proof?"

He didn't answer.

Ryman crushed out the butt of his cigarette, hesitated, then lit another. He pushed the pack towards me. "Smoke?"

"Thanks." I jiggled the little white cylinder for a moment, then stuck it in my mouth and reached for a light. "I want to talk to you, doc."

"I can guess what about." He laughed at my expression and blew a streamer of smoke across the tiny dispensary. "Helen?"

"Yes. You know about Johnson, I suppose? She told

him that Carter took advantage of her, pulled rank and she couldn't refuse. She let him kiss her because she wanted him to marry her and Johnson. Now Johnson thinks that Carter has it in for him and respects him about as much as I respect a skunk."

"You stay away from a skunk," reminded Ryman.

I nodded.

"And Johnson stays away from Carter, but I don't like it. Kennedy can't understand why he isn't getting anywhere with Helen; he's not used to being ignored and it burns him up. He takes it out on Johnson, so we have the three of them hating each other."

"Three of them?"

"That's what I said. Carter wants to finish what the girl started."

"I see what you mean." Ryman dragged at his cigarette. "The old biological urge, perhaps the strongest emotion there is."

"Yes." I stared at him. "Where does that leave you?"

He flushed and avoided my eyes. "What do you mean?"

"Don't act dumb," I snapped irritably. "I've watched you, I've watched you all, and you all dance to Helen's tune. Johnson thinks that he owns her. Kennedy and Carter the same. You've been sitting back and letting them get on with it. Has she tried to collect your scalp, too?"

"Yes," he admitted. "She has."

"I thought so."

"Wait a minute, Radford. I admitted that she tried, but I didn't say she succeeded. I'm a man and I won't deny that I find her attractive, but as a doctor I can recognise the stimulus and resist it."

I sniffed at the air, not saying anything, just sniffing. Despite the scent of cigarette smoke I could catch a hint of perfume. Ryman noticed my expression and began to get angry.

"So what if I have been talking to her? There's no

harm in that, is there?" Irritably, he crushed out his cigarette. "She won't be here much longer, and I like her company. Life is bad enough waiting for the end of the world without us making it worse. A little fun never harmed anyone."

"What are you trying to do, justify yourself?" I stared at him, trying to control my anger. "You know the set-up here as well as I do. We were hand-picked for this job, and we used to work in harmony. Look at us now, at each other's throats because of a woman. If we were on Earth it wouldn't be so bad, but we're not on Earth. We're stuck on the Moon without a heavyside layer to shield us from solar radiation, without any distractions, with nothing but ourselves. We aren't even normal, each of us is a little psychotic, if we weren't we couldn't stand a monastic life for so long." My hands were trembling with rage. "Listen to me, Ryman, that woman means trouble.

Something's got to be done about her—and fast!"

"What?" He stared at me, his eyes glinting with amusement. "We can't radio Earth for fear of someone taking a directional fix. We can't lock her up like an animal. We can't get rid of her until the relief ship comes. You tell me, Radford, what shall we do with her?"

"You've already told me," I said. "Lock her up, weld the doors, and forget her. Forget that she ever existed."

"Impossible. You can't eradicate memories like that. We know she's here and men, being what they are, couldn't stop thinking about her." He shrugged. "Your trouble is jealousy, Radford, and you might as well admit it. Helen is just a nice, normal, sweet girl. You're sore because she doesn't like you and, because of that, you don't like her."

I glared at him, tempted to smash my fist into his grinning mouth. I resisted the impulse. "Damn you," I said. "You're wrong, as wrong as

hell—but I hope that you're right."

I got up and reached for the door. I had it unlatched, was about to swing it open, when I was almost knocked flat on my back. Carter stared at us, his face taut and strained.

"Come quick," he rapped at Ryman. "I think that Kennedy's dead."

Together we raced down the corridor.

They were in the lounge when we arrived. Helen, her clothing torn, her hair dishevelled, clung, sobbing to Johnson, who stared at us with hard eyes. Kennedy lay on the floor, a great pool of blood spreading around his head. Ryman dropped beside him, his fingers exploring the wound.

"What happened?" Carter spun the girl towards him, away from the circle of Johnson's arms. "Come on, girl, talk!" He was all commander again, hard and stern as he stared at the sobbing girl.

Johnson stepped forward. "Wait a minute, Carter, she . . ."

"Shut up, Johnson!" Carter stared at Helen. "Well?"

"He attacked me," she gasped through her sobs. "He tried to . . ." She gulped and looked helplessly at the commander. She looked very young and very innocent. "I couldn't stop him, he was too strong for me. I was desperate and, when my hand touched the bottle, I hit him with it. I . . ." She collapsed in a fresh storm of tears.

"Is he dead?"

"No." Ryman rose, wiping his fingers on his handkerchief. "Fractured skull and concussion, but he'll live."

"Can he talk?"

"Not a chance. Later, perhaps, but not now."

"I see." Carter bit his lips in indecision. "So all we have to go on is Helen's word as to what happened."

"He tried to rape her," said Johnson savagely. "He deserved all he got."

"We don't know that," I said. "And even if he did, she asked for it. Get wise to yourself man, she's no better than a . . ."

I staggered back, my mouth filling with blood and my head ringing from the impact of his fist. Carter stopped me as I lunged forward.

"Cut it out! Stop it, Radford! Stop it, I say!" He looked at the girl. "Is that true? Did you encourage him?"

"Of course she didn't." Johnson glared at Carter. "Kennedy's to blame for what happened; he just wouldn't leave her alone. If you'd have married us when I asked this wouldn't have happened."

"No?" Carter shrugged and stared down at the unconscious man at his feet. "Help Radford carry him to the dispensary and then go on duty." He caught hold of Helen's arm. "You come with me. There's a lot of things you and I have to discuss."

Silently, we stooped and lifted Kennedy's limp figure. He wasn't heavy, not on the Moon, but I was glad to get him to the medical quarters. We put him on a cot and then went up to the observation room. Johnson wanted to talk.

"She couldn't help it, Sam," he insisted. "What else could she have done?"

"Are you asking me or telling me?" I was fed up with Johnson and my mouth hurt from his punch. "I'm not interested."

He kept silent for a little while, staring at the screens and watching the moving panorama of Earth. It didn't last; the man just had to talk.

"I wonder what Carter's going to do?" he mused. "Damn Kennedy. I should have killed him myself. Always sneering at me because Helen preferred me to him. I'm glad she did it."

I didn't say anything.

"What do you think of her, Sam? Honestly, I mean."

"I told you once. My mouth still hurts from your answer."

"You didn't really mean that, did you?" It was pitiful to listen to him. "Helen isn't like that. I know."

"Do you?" I slammed in the automatics and turned to face him. "How do you know? What makes you so sure? A girl arrives here in a cargo bin and says that she wanted to get to Mars. That's all anyone knows about her. How did she persuade that field mechanic to seal her in? How did you get to know her well enough to want to marry her? Did you soap her back in the showers, too?"

"No." He stared at me, his plump little features looking as though he wanted to cry. "She wanted to see the station and I took her around. She used to stay with me sometimes when I was on watch. It gets lonely up here sometimes, and I was glad of the company. I just couldn't help falling in love with her."

"I see." I felt my palms grow clammy with sweat, and

it seemed hard to breathe. "So you took her over the station, did you? The most guarded military secret we have and you showed it all to a stranger."

"No!" He backed away from me, his eyes twin blotches of fear against the whiteness of his face. "It wasn't like that at all. It was just because I was lonely and I wanted her. I wanted her, Sam, you can understand that."

"Sure," I said bitterly. "You wanted her—and so does Carter." I regretted it the moment I had said it. I saw how it affected him, saw his eyes grow wide with too-recent memory, saw him turn and run from the observation room.

The alarms bleeped just then and I swore as I turned to the watch-screens. As usual it was a false alarm, an atomic-engined jet liner, their trails always show, but I dared not take any chances and had to track it until I was sure. Just as I had cleared it

from the screen the alarm bleeped again, then again.

When I finally managed to get down to the commander's quarters, it was too late.

Carter was dead.

He lay in a crumpled heap over his desk and it didn't take the ugly bruises around his throat to tell me how he had died. His eyes did that, swollen and starting from their sockets in tune with the protruding tongue and horrible congestion of his face. The lipstick around his mouth made him seem even worse.

I ran from the office to the dispensary. Ryman wasn't there and Kennedy rested on his bunk like a man already dead. He wasn't though. I felt the beating of his heart and, as I left him, I locked the door. I stood for a moment outside the sick bay deciding on my next move. The station wasn't large enough for anyone to hide in for long, but I remembered Carter and I wanted to find the couple before they found me.

I found them at the door leading to the store room.

Ryman was with them. I could hear him talking to Johnson as though he were talking to some backward child. I waited around the corner of the passage, listening, giving him his chance, still not certain of just where he stood.

"What's the matter, Johnson? Why are you running?"

"Go to hell." Johnson made a sound as if he were spitting.

"I know what you want, what you all want. Helen. But you can't have her, she's mine, and I'll kill anyone who tries to take her from me."

"I won't take her from you," soothed Ryman. "You know that, don't you? You can trust me, Johnson. You can always trust me."

"Like Carter?" Johnson sounded ugly. His voice was too high, too near the breaking point. I edged a little closer. "I knew what Carter was trying to do, and I killed him because of it. Now you want to kill me so that you

can have her all to yourself. Well, you're not going to."

"Don't be a fool, Johnson!" Ryman's voice carried sudden alarm. "Put down that gun! Johnson!"

The report echoed along the passage, and I heard Ryman choke as he fell. I licked my lips and began retreating along the passage. Johnson must have taken the gun from Carter's desk. It was the only one in the station, and I knew that she hadn't brought one with her.

It was too late to help the doctor, and I had to get back to the observation room. That was where the controls were, the sealed controls to the atomic missiles which could blast Earth. I reached it just as a second explosion echoed through the station, and for the first time in a long while, I smiled. She had made her first mistake.

The alarm bleeped as I crouched down behind a cabinet. I ignored it; there wouldn't be any danger yet. It was still bleeping when she

entered the observation room, cautiously, carefully, the pistol a glinting finger of menace in her hand. I ducked even lower, holding my breath and trying to silence the pounding of my heart.

I heard the click of the door sliding shut, another click as it was locked, and the faint rustle of garments. I stayed where I was until I heard her cross to the watch-screens, and then, carefully, I peered around the edge of the cabinet.

She had put down the gun and was busy breaking the seals on the missile controls. I waited until she began feeding data into the firing computer, then, cautiously, I rose and moved towards her. I walked on tip-toe, praying that she wouldn't see my reflection on the watch-screens or turn at the wrong moment. She didn't, and I snatched up the pistol.

"Hello, Helen."

"What!" She spun round on the swivel seat, her eyes wide and startled against the

whiteness of her face. "Sam! I thought that the room was empty."

"Obviously." I kept the gun pointing at her. "Is that why you broke the seals?"

"Seals?" She frowned as she stared at them. "Is that what they are? I thought that they were for focusing the view-plates."

"I see." I nodded as if satisfied. "Why are you here, Helen?"

"I was frightened. Johnson must have gone insane and he threatened to kill me. The others have gone after him. The commander gave me this pistol to protect myself and ordered me to wait up here until they had caught him." She looked at me, her eyes brimming with tears. "It was horrible. They were all shouting and arguing, and I didn't know what to do. I was so afraid, Johnson seemed so wild, so I came to join you."

"Me?"

"Yes. I knew that you would be on duty, Carter

told me." She slipped off the swivel seat and moved towards me. I could smell the heavy scent of her perfume. "Please, Sam, help me. I'm so frightened and so alone."

She moved even closer to me, the tears running down her cheeks, a young, scared, helpless woman in the full ripeness of her beauty. A woman pleading for male protection. Almost I believed it.

Almost.

The alarm bleeped again and I stepped back from her, drawing deep breaths to dispel the scent of her perfume.

"Stay away from me," I said. I glanced at the watch-screens then back to her. "I said stay away from me."

"Why, Sam!" She sounded shocked, hurt a little, almost as if she couldn't believe her ears, but she stopped coming towards me. It may have been the expression in my eyes or the gun in my hand, but she stopped. "What's the matter?"

"Don't you know?" I glanced at the watch-screens again. "How much did they offer you to take over the station?"

"What are you talking about?" She looked puzzled. "I don't understand you, Sam. Why don't you like me?"

"I like you well enough," I snapped, "at a distance. If you don't believe me, just try coming too close. I've never shot a woman before, but I'm willing to try anything once." I grinned at her. "I know what you are, and why you are here. Now give me just one good reason for not killing you."

Even that didn't scare her. She smiled at me, a living picture of an advertising artist's dreams, and armoured in the knowledge of her own attraction. Her hair looked too soft, her skin too white, her lips too tempting, too like a moist red scar against the paleness of her face.

Too like a cut throat.

"It was clever," I admitted. "A man would have been suspect from the beginning, but a woman, a beautiful woman, could get away with literal murder. You found our weak point. Kennedy could have taken you and forgotten about it immediately afterwards. Carter had too much responsibility. You gave him a few kisses, enough to soften him and allow you the freedom of the station, but he wasn't your man. Neither was Ryman. Johnson was our weakness."

"I didn't want Johnson," she said softly. "I wanted you, but you didn't like me and so I agreed to marry him. I thought that it would make you jealous, make you realise what you were losing."

"Johnson was a neurotic," I said, paying no attention to her. "That doesn't mean much up here, we all are, but it made him easy meat for you. Too easy. He'd never had a woman of his own and, when he found you, he thought that he'd found heaven. Naturally,

he was jealous, naturally he wanted to kill anyone who came between you. He couldn't do anything else."

The alarm bleeped again and I saw her eyes jerk to the screen. I took no notice.

"Kennedy didn't try to rape you. You hit him from behind and invented the story. It was a good one; it served to get him out of the way and needle Johnson. You had already made sure that he and Carter hated each other and, like a fool, I had to go and trigger off his suspicions. What did you do to make him kill? Kiss Carter when you heard him coming?"

She smiled and stepped towards me, then stopped when she saw the gun.

"Then Johnson shot Ryman and, after you took the gun from him, you shot Johnson. You would have shot me had you seen me, but I took care of that." I pointed the weapon at her stomach. "Don't make me, baby. It will hurt."

She paled and I sighed as I

looked at her, wondering where they had found her and how they had trained her. Sex hormones, of course, they would account in part for her perfect figure and absolute femininity. But how had they managed to invent a perfume which aroused male desire? How many years had been spent in training her in psychology, technology, the subtle arts of seduction? They must have trained her from early youth, fashioning her as other nations would fashion a machine or breed a plant.

It was our own fault, of course. No nation liked the Damoclean Sword which was the station, and this was their way of eliminating it. A good way, too. One woman, armed and trained as she was, penetrating among the neurotic, woman-worshipping crew we were supposed to be, could achieve more than a thousand trained regiments. Much more. She was a weapon more potent than an entire battle squadron.

My finger tightened as I

thought of how near success she had come.

"I should kill you for what you intended to do. It would be easy. I hate you, not for what you represent, but what you are. I should kill you, but I won't. I shall lock you in a store room until the relief ship arrives. They will want to question you back home, so you're safe, but don't take any chances."

I saw the relief in her eyes, the sudden flash of hope. After all, I was a man and she had been trained to bend men to her will by the subtle power of her body and the trained skill of her mind. She stepped towards me and I only just managed to release the pressure on the trigger in time. I stepped back, far back, and what she saw in my face made her turn even whiter than before.

"You almost killed me," she whispered. "But . . ."

"Forget it." I sucked in air to rid myself of the stench of

her perfume. "You couldn't make me act like Johnson if you had a million years, and you can wipe that hopeful expression off your face. You're finished, baby, finished. Back home the women will see to that."

"I don't understand," she whimpered. "I like you so much and you are so cruel." She stared at me, game to the last, and almost I admired her for it. Then I remembered Carter and Johnson, Ryman and Kennedy, and all the innocent millions who would have died had she tripped the releases, and I didn't admire her at all. I prodded her towards the panel.

"You should have known that the crews of Station X would be carefully selected against any emergency. I told you that we were all neurotics—not normal in the true sense of the word." I watched as she unlocked the panel. "You see—I'm a misogynist."

Somehow, telling her that made me feel good.

Book Reviews

FICTION

ONE IN THREE HUNDRED, by J. T. McIntosh, published by Museum Press, 26 Old Brompton Road, S.W.7, at 10s. 6d., is really three stories in one: *One In Three Hundred*, *One In a Thousand*, and *One Too Many*, which, together, make one of the most satisfying novels of recent times.

The third winner in the 1955 International Fantasy Award, it is a simple story simply told. The Earth is on the brink of destruction by solar heat. There is but little time to prepare for the evacuation, and not anywhere near enough time to save all the populace. Bill Easson has the unenviable task of selecting, from his area, one person from each three hundred to accompany him to Mars. That is the first part. Of all the ships which leave Earth the odds are one to a thous-

and of them arriving safely at their destination; that is the second part. The third deals with the problem of a man who is, literally, *One Too Many*.

Simple? Yes, but all the more effective because of that. The author has dealt with real people and shows a great insight of human nature when beset by temptations, problems, and the very things which make us what we are. A book not easily forgotten.

PURSUIT THROUGH TIME, by Jonathan Burke, published by Messrs. Ward Lock & Co., 143 Piccadilly, W.1, at 10s. 6d., is one of those interesting time-travel stories which, when well done, can be fascinating in their complexity.

Simon Lemuel was on the way to becoming a world dictator and the only way to stop him was to go back and ensure that he never started.

This lays the groundwork of one of the most amazing journeys ever undertaken, a journey not through space, but through time. Less well done, this book would have been little better than space opera, but it manages to retain the fast, swift pace without loss of the good writing which has made the author one of the most popular contributors to this magazine.

STORIES FOR TOMORROW, edited by William Sloane, published by Eyre & Spottiswoode, 15 Bedford Street, W.C.2, at 18s., is an anthology which includes some old, some not so old, but all good stories.

Of the twenty-two stories, some short, some novelette length, the selector has tried to combine them into sections and has not hesitated to use more than one story by the same author if he saw fit. The result is an anthology which can be recommended and which will provide many hours of pleasant reading.

THE GALAXY SCIENCE FICTION OMNIBUS, edited by H. L. Gold, published by Grayson & Grayson, 16 Maddox Street, W.1, at 13s. 6d., is value for money which will be hard to beat.

Consisting of twenty stories, all from *Galaxy*, the title page reads almost like a *Who's Who* of science fiction. Here are presented the "best of the best" according to H. L. Gold, and his reputation for being able to pick a good story is too well known to argue with. If you like *Galaxy* you are certain to like this omnibus. If you have never heard of *Galaxy* but like science fiction, then you will find this book the one you have been waiting for.

THE BEST FROM FANTASY AND SCIENCE FICTION, edited by Anthony Boucher, published by Doubleday & Co., at 3.50 dollars (approximately 30s.), is another anthology, the fifth series from the *Magazine of Fantasy and Science Fiction*.

This one contains seventeen items, four of which are tiny "vignettes" and all follow

the trend of the magazine in which they first appeared. Some readers like the vague, slick, oddly irritating writing, while others will yearn for the good, solid, no-chi-chi-nonsense of the down-to-earth plot satisfactorily explained. No matter what may be said about the plots, the writing and literary quality is high. If you like the magazine then you'll like this book. If you're eager to sample "odd" stories, then you'll find it interesting.

NON-FICTION

THE SEARCH FOR BRIDEY MURPHY, by Morey Bernstein, published by Doubleday, at 3.75 dollars, is the story of an experiment in hypnosis.

It is a true story—so it is claimed—that spans the bridge of time to a day in Ireland in 1798, but it starts in the present, in 1952, when the author, a young business man, conducted an experiment which, if we are to believe what we are told, practically proves the existence and truth of reincarnation.

The procedure of the experiment was simplicity itself. A young woman, Ruth Simmons, was put into a deep trance and then told to "go back." Apparently, she went right back, beyond birth and into a previous existence, for she mentioned incidents, names, places and episodes which belonged to a girl of 1798, Bridey Murphy, an Irish Colleen. To give the author his due, he does not attempt to make extravagant claims, and he points out that there is other evidence leading to the same conclusion of the possibility of reincarnation. I use this word for want of a better term, but there is no mysticism in this book, just an intensely interesting account of an experiment performed with the help of modern techniques in a subject which is still waiting to be fully explored.

THE ROBOT ERA, by P. E. Cleator, published by George Allen & Unwin, Ruskin House, Museum Street, London, at 16s., is a book designed to show that, even

now, we are living in a robotic age.

It is educational in that it will do much to destroy the old concept of a "robot" being nothing more or less than a "tin man." Robots are far from that; they serve in almost every walk of life, and their sole purpose is to increase efficiency and step up production with all that implies. The inescapable theme is towards complete automatism, with the emergence of self-regulating machines able to function without supervision and even to check the standard of their own performance. Automation is with us now.

The author looks at the effects of robotic machinery in shops, homes, factories, communications, transport and war, and concludes with a glance at some of the more sensational social implications of the near future.

THE MEN BEHIND THE SPACE ROCKETS, by Heinz Gartmann, published by Weidenfeld & Nicolson, 7 Cork Street, W.1, at 18s., is an account of the men who

have devoted their lives to the conquest of space.

The author, himself an expert on rocket research, has compiled a book dealing with the lives of men who, when the first rockets traverse space, will be recognised as the great pioneers. Hermann Granswindt, the disregarded fanatic who produced the first realistic design for a spaceship; Tsiolkovski, the obscure Russian schoolmaster who bequeathed his research work to the Communist Party; Robert Hutchins Goddard, the publicity-shy American professor who designed the first liquid fuel rocket; Hermann Oberth, the "Grand Old Man" of German rocket research, now in America, and Wernher von Braun, the youthful chief designer of the V2, better known perhaps for his work on the "wheel-shaped" space station.

These are the men who, as the author points out, are basically responsible for the fruition of space flight as proposed by the artificial satellite.

Their lives make interesting reading.

Discussions

HELP!

Statistics—wife of Sgt. R.A., mother of two daughters, reader of anything and everything, but especially of science fiction. Would anyone who has unwanted books or magazines of science fiction pass them on to me, please? I pass all books on to the unit library—they aren't there half an hour before being snapped up. How about it, can anyone help?

Mrs. E. R. Hollis (Bobbie),
3 Gardines Road, Larkhill, Wilts.

Well?

NEW THEORY

I would be pleased if you would print my theory. I know nothing of maths so I have put my ideas as clearly as I can. Perhaps better brains than mine can tear it apart, I can't, and I would be pleased if you would point out the defects.

Theory: Time, Expansion and Gravity are One.

In that everything visible to us is expanding at the rate of time. This causes the effect (not force) of gravity, in such that objects released from the hand remain stationary until the Earth expands to meet it. The air, being tenuous, is displaced though, like the object itself, is expanding.

The reason for dense objects

being heavy is entirely due to inertia reacting on the device holding them. The falling (?) rate is the same for heavy and light objects due to the factor of expansion.

Expansion rate constantly increases until it reaches the speed of light, when it vanishes into another dimension together with all light and matter. It then slows down, tracing as it were a return spiral until it reaches zero speed and reappears as matter itself to feed the expansion.

Light, or matter, can only attain its true maximum speed in absolute void which, being nothing, does not exist and must return at diminished velocity. Of course, a single spiral will not suffice and, as spirals within a globe can be infinitely divided there could be an infinite number of spirals or dimensions. But as they are so close they could be co-existent.

Conclusions:

Gravity can only be altered by mechanical means, rockets, etc., as it is a movement itself and not a force or field.

Time is also movement, the past is covered up by expansion, the future is recreated so, as such, is unpredictable.

Speed of light; any excess of this

is impossible as attainment of this speed results in reversal to matter.

Mr. B. Crocker,
5 Beechwood Walk, Leeds 4.

Whew! Some theory! Well now, let's try and pull it apart. First: heavy and light objects do not fall at the same speed, not in atmosphere they don't. Try it with a feather and a brick if you have any doubts. But, if your theory was correct, air-resistance wouldn't make any difference, would it? They would still hit the ground—or the ground would come up to meet them—at the same time.

Second: We know that the rate of fall, or pull of gravity, is 32 feet per second, per second. That is, in each second, an object will increase its velocity by 32 feet. Now, to give the same effect the Earth would have to be expanding, like a balloon, at the same rate. At the acceleration of 1G, i.e. 32 feet per second, per second, we would reach the velocity of light in approximately one year. It is just possible that we wouldn't know anything about the transition between dimensions, but, expanding at that rate, and as everything else is expanding, too, what happens when we hit the Moon, the Sun hits us?

Third: Well, I'll leave the rest to the readers, who will probably be only too eager to write to you and give their views. But, all the same, it is an interesting concept and should provide many hours of pleasant discussion. Thanks for sending it in.

CALLING MALTA

Knowing that you are always ready to help SF fans to find clubs, I am sure that you will help us to make our society known among your readers in Malta.

Any reader interested in the Malta Astro-Science Society should send a stamped addressed envelope to: Rene Zahra, 12 St. Pius X Street, Zejtun, for information about the society, dates of meetings, etc.

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cannot but congratulate you on the high quality matter which so often is finding its way between the covers of *Authentic*. Keep it up, and see that you never omit the non-fiction articles.

Reno Mario Caruana,
45 Dun Mikiel Cassar Street,
Zejtun, Malta.

Never is quite a long time, but we'll do our best to satisfy most of the readers most of the time.

FROM DOWN UNDER

The material in *Authentic* is very good; the stories are near excellent; the articles are very interesting; the illos are good; and the photograph reproductions are quite passable. However, I think the way it is set out is quite shocking. I cannot imagine why you crowd all the articles to the front of the magazine and leave the stories to clutter up, in any old fashion, the rest of *Authentic*.

One of my greatest grudges against you is the look of the title, AUTHENTIC SCIENCE fiction monthly seems, to me at any rate, to be childish and, quite honestly, rather stupid. Please go back to your "From Earth to the Stars" name-piece. Please set out your contents in a more interesting fashion.

I've been reading through some back copies of *Authentic* and I've noticed that in your 30's and 40's you had something that no other prozine had. You had articles written about fans, for fans, by fans, and with fans. So please, extra-special please, put back some

of the fan articles you used to have.

I like the stories you print; their quality since the 30's has been quite high. I like your articles—although most of the information in them I can get from other technical magazines. I like your covers—but I don't think much of the ad on the back. The paper you use for your inside pages? Well, it's okay by me, except that the photograph reproductions seem to be rather spoilt.

Now get this. Comparing issues 41 and 62 (the latest I've been able to buy) I think that 41 is the better. It is better because of one thing; because it tells SF fans all they might want to know about fan organisations. I think that if you gave us, even occasionally, an article or two about SF fandom, your pages would be brightened and your circulation increase.

By the way, the Wellington Science Fiction Circle is now founded. We've got ten members for sure, and a few others who drop in on meetings now and again. We've got a number of correspondents around Australia, N.Z., U.S.A. and Great Britain. Recently the circle put out a fanzine, "Focus."

Bruce Burn, 12 Khyber Road,
Seatown, Wellington, E.5,
New Zealand.

I wonder if you still think your comments justified? As you can see, the magazine is undergoing changes, and I'd like you to let me know what you think. As for your other suggestions: fan articles are of great

interest—to fans, but fans do not constitute the majority of our readers. Also, to be fair, I am always ready to publicise any new fan club, fan convention, or fan activity. But fandom has its own magazines, fanmags similar to your own, and, surely, they are the place for articles for, about, and by, fans?

OUCH!

Some readers of *Authentic* criticise the informative articles. Well, in my opinion, they are usually the only part of the mag worth reading. The stories are certainly inferior. R. C. Hope, 266 Pershore Road, Edgbaston, Birmingham 5.

Still inferior?

PROGRESS REPORT

I have just finished reading No. 62 and can honestly say that the magazine is one of the best available in this country. The stories and articles were very good and well up to standard. *Private Satellite*, however, did not seem to be up to Jonathan Burke's usual standard; it seemed a bit weak and too drawn out. I am disappointed in one respect: you have increased the size of the mag but are still using the fine print in one or two cases. I was hoping that the extra pages would enable you to revert to larger print throughout.

I quite agree with everything you say about M. R. Binell. I also agree with Miss J. Anderson on all

of her five points, but I think myself that the first attempts at space travel will be made by individual countries or small groups of countries and not the U.N.

That will not come until we have a stable World Government.

Phil Cottrel,
35 Shepparson Avenue,
Carnegie S.E.9, Australia.

Does anyone else agree with that?

A YOUNG READER

I am fourteen and have only been reading science fiction for a year. The newsagent showed me some *Authentics*. I was wary of them because I'd read an American magazine and couldn't follow the stories. However, I bought a couple, and how delighted I was! Your mag is tops! One criticism, however; your interior illustrations are bad. Please throw Mortimer out. Why can't the cover depict a story? Please do not have serials. And why do you hate "space operas"? Please publish at least one in every issue.

Philip Harbottle, 20 David Street, Wallsend-on-Tyne, Northumberland.

I don't hate space operas, Philip, but they, like any other story, must be well done and, the better done they are, the less they deserve the title of "space opera." Sorry you don't like Mortimer; most of our readers seem to think that he's pretty good.

HOW MUCH OF YOUR WAGE PACKET



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Mrs. C.A.H., Coventry

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F.F., Hertford.

Dear Sirs,

I bought an APAL from you nearly eighteen months ago, and it did for me all that you said it would. I have not smoked for seventeen months, and have no desire at all to do so.

G.H., Marham, Norfolk

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